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THE JOURNAL

OF THE

ANTHROPOLOGICAL INSTITUTE

OF

GREAT BRITAIN AND IRELAND.



33027

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(OLD SERIES. VOL. XXVIII.)

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THE JOURNAL

OF THE

ANTHROPOLOGICAL INSTITUTE

OF

GREAT BRITAIN AND IRELAND.

(New Series.)

. PREFATORY NOTE .

THE Anthropological Institute of Great Britain and Ireland was constituted in January, 1871, by the amalgamation of the Ethnological Society of London, which had been founded in 1843, and the Anthropological Society of London, established in 1863. Since the formation of the Institute, an illustrated journal has been issued in quarterly numbers, forming, during the twenty-seven years of its existence, a series of as many volumes. Following precisely the size and shape of the publications of the pre-existing Societies, the Journal of the Anthropological Institute has hitherto been a demy octavo. But this form has not been without inconvenience, especially where papers have required illustration by means of ample plates and tables. With the view of obviating, as far as possible, this inconvenience, as also of improving the general appearance of the Journal and bringing it into harmony with the important publications of some of the Continental Anthropological Societies, the Council of the Institute have determined to issue the Journal henceforth in the form of an Imperial octavo. A New Series is consequently now commenced, of which the present double number forms the first part.

PROCEEDINGS

OF THE

ANTHROPOLOGICAL INSTITUTE.

ORDINARY MEETING.

FEBRUARY 22ND, 1898.

F. W. RUDLER, Esq., F.G.S., *President*, in the Chair.

The Minutes of the last Meeting were read and signed.

The election of the Rev. H. N. HUTCHINSON, B.A., F.G.S., as a Fellow of the Institute, was announced.

The PRESIDENT returned thanks for his own election at the Annual Meeting, and expressed the hope that the papers to be contributed to the Institute during the present session would materially advance the study of Anthropology.

Mr. J. EDGE-PARTINGTON exhibited two tattooed heads, carved in Kauri gum, from New Zealand, supposed to have been carved by the Maori. They were of exceptional size, and were made from large masses of gum, dug up on the site of what were once forests of Kauri pine.

The PRESIDENT then introduced Mr. T. C. CANTRILL, B.Sc., who exhibited and described some of the articles found in his recent exploration of a Cairn in South-West Breconshire.

Discussion was carried on by Mr. C. H. READ, Mr. A. L. LEWIS, and Professor RUPERT JONES.

The PRESIDENT, having thanked Mr. Edge-Partington and Mr. Cantrill for their exhibits, introduced the Rev. A. E. HUNT, who read his paper entitled, "Ethnographical Notes on the Murray Islands," illustrated by a large number of objects of ethnological interest.

Professor A. C. HADDON, M.A., D.Sc., exhibited and explained a series of Lantern Slides illustrating the natives of Torres Straits.

A cordial vote of thanks was passed to both the Rev. A. E. Hunt and Professor Haddon.

NOTE ON A COLLECTION OF OBJECTS OBTAINED DURING THE RECENT EXPLORATION OF A CAIRN IN BRECONSHIRE.

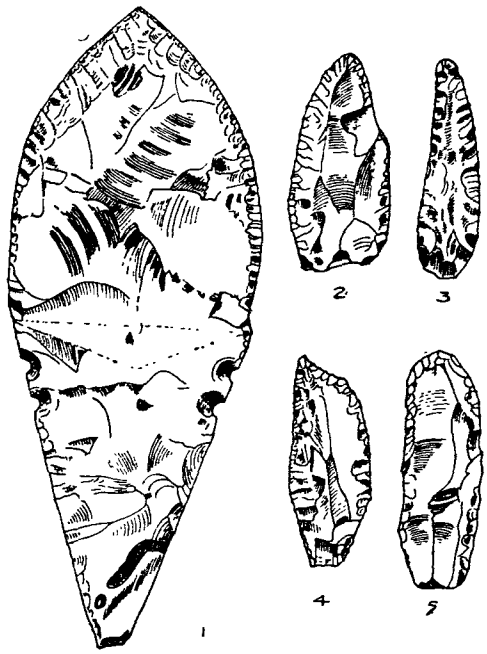
By T. C. Cantrill, B.Sc. Lond., of the Geological Survey of England and Wales.

The cairn from which the objects were obtained is situated near the village of Ystradfellte in Breconshire. It was a low circular dome-shaped heap, composed of blocks of limestone (Carboniferous Limestone), and of red sandstone (Old Red Sandstone), resting on drift gravel overlying Carboniferous Limestone *in situ*. Amongst the stones forming the main mass of the cairn were a few teeth and fragments of bones of Sheep or Goat, Long-faced Ox, Boar, and Song Thrush. A layer of black earth, which intervened between the stone-heap above and the natural gravel below, contained (*a*) fragments of wood charcoal; (*b*) fragments of calcined bones, probably human; (*c*) 21 sherds of pottery—the cinerary urn—ornamented with three different forms of impression; (*d*) 50 implements and fragments of white flint, comprising 10 more or less definite implements, 1 core, and 39 flakes and chips.

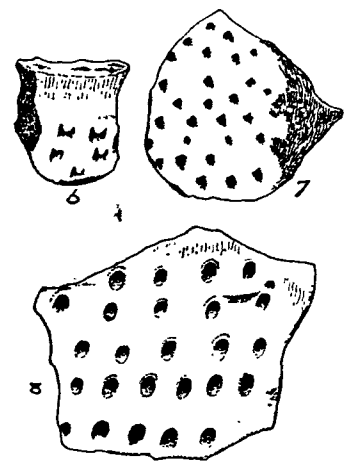
The implements are as follows: a delicately flaked and partly ground spear-head or knife, 6·5 inches long, with two thong-notches on each side, and closely resembling Fig. 266 in Sir J. Evans's *Ancient Stone Implements* (2nd edition); a triangular arrow-head; two small knives; a strike-a-light or a flaking-tool; a small horseshoe-shaped scraper; a four-sided semi-hexagonal scraper; and three small flakes dressed at the butt to a chisel-shaped edge.

The spear-head or knife lay a little to the east of the centre of the cairn; the arrow-head, two small knives, and the strike-a-light lay together under the protection of three natural slabs of red sandstone—the largest only 20 inches long—a few feet south of the centre; the sherds of pottery, calcined bones, and many of the charcoal fragments lay a little to the north-east of the centre. The remaining flints were found scattered over the whole floor of the cairn. All the objects were placed on the original surface of the ground, and not in any grave or excavation. The interment is probably late Neolithic or even of the Bronze Age.

For a fuller account the reader is referred to *Archæologia Cambrensis* for July, 1898, from which the accompanying illustrations are reproduced, by the kind permission of the Editor.



FIGS. 1–5.—FLINT IMPLEMENTS FOUND IN CAIRN AT YSTRADFELLTE.
Scale: ½ linear.



FIGS. 6–8.—POTSHERDS FROM CAIRN AT YSTRADFELLTE.
Scale: ½ linear.

Fig. 1.—Dagger-knife. Fig. 2.—Implement, possibly an Arrow-head. Figs. 3 and 4.—Implements, possibly Knives. Fig. 5.—A Fabricator, or a Strike-a-light. Figs. 6, 7, and 8.—Fragments of pottery with M-shaped, triangular, and elliptical indentations respectively.

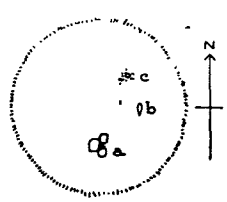


FIG. 9.—PLAN OF CAIRN.
$\frac{8}{16}$-inch = 22 feet.
a. Implements (Figs. 2, 3, 4, and 5).
b. Dagger-knife.
c. Potsherds.

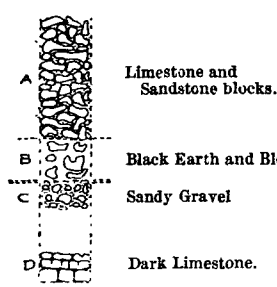


FIG. 10.—SECTION.
Scale: $\frac{1}{48}$ linear.

Fig. 9.—PLAN OF THE CAIRN AT YSTRADFELLTE—

a. Three blocks of sandstone forming a protection for implements shown as Figs. 2 3, 4, and 5. *b*. Dagger-knife (Fig. 1).

c. Pieces of pottery, including those shown as Figs. 6, 7, and 8, together with small fragments of charcoal and of burnt bone.

Fig. 10.—SECTION—

A represents the cairn itself, composed of limestone and sandstone blocks. A thin layer of turf and soil covered the upper surface. Among the stones occurred a few animal teeth and bones. The lowest of the stones were embedded in soil, but for the most part the interspaces were empty.

B represents the black earth, in which occurred the flints, potsherds, calcined bones, and charcoal. The double broken line between B and C marks approximately the position of the original surface of the ground.

C is a layer of reddish sandy gravel (Drift), slightly bleached at the surface.

D is the underlying Carboniferous Limestone.

ETHNOGRAPHICAL NOTES ON THE MURRAY ISLANDS, TORRES STRAITS.

By Rev. Archibald E. Hunt, London Missionary Society.

At the eastern end of Torres Straits, about latitude 10° S. and longitude 144° E., lies the little group known as Murray Islands, the islands being so named after one of the officers of the "Fly" Expedition which visited Torres Straits about 1842–1846.[1] The group consists of three small islands, the largest of which, Mer, is only about five miles in circumference, and the others, Waier and Dauar, much smaller still. From the account given by Jukes in his *Voyage of H.M.S. Fly*, the population has evidently at one time been very much larger than at present. In 1846 Jukes estimated the population at about 700; but in 1889, when counted by the writer, the census was only a little over 400, and a more recent census shows a further rapid decrease. There can be little doubt but that in a comparatively few years the race will have become extinct.

The following notes were collected by the writer during a residence of nearly three years as missionary of the London Missionary Society on the Island of Mer, from 1887 to 1890. The information was gathered from several of the oldest natives on the island, who met periodically at the Mission House and told their stories or answered the questions put to them. The conversation was carried on entirely in the vernacular, and, wherever the answers suggested doubt or uncertainty, the question was referred to other natives for further information or confirmation. The writer is conscious that many of the notes are deficient, and probably some are inaccurate; but in every case the greatest care has been taken to ensure accuracy, and in many instances the same questions have been submitted to several different natives and their answers compared. Owing to a somewhat hurried departure from the island, the writer regrets he was unable to complete his task, and many important questions have had to be omitted owing to incomplete *data*. The lines followed were suggested by the *Notes and Queries on Anthropology*, published for the British Association, and also *Questions on Manners, Customs, &c.*, published by Mr. J. G. Frazer, M.A. The writer also acknowledges his indebtedness to his friend, Professor A. C. Haddon, M.A., of the Royal College of Science, Dublin, for many valuable hints and suggestions.

In all native words the following vowel pronunciation has been followed:—
$\bar{a}$, as in "father"; $\check{a}$, as in "bat"; $\bar{e}$, as *a* in "mate"; $\check{e}$, as in "get"; $\bar{\imath}$, as *ee* in "feet"; $\check{\imath}$, as in "pit"; $\bar{o}$, as in "go"; $\check{o}$, as in "pot"; $\bar{u}$, as *oo* in "boot"; $\check{u}$, as in "but"; $\bar{a}\bar{\imath}$, as in "aisle"; $\bar{a}\bar{u}$ as *ow* in "cow."

[1] See Jukes, *Narrative of the Surveying Voyage of H.M.S. Fly*. London: T. & W. Boone, 1847.

I.—TRIBES, TOTEMS, &c.

The natives were divided into clans, each of which had distinctive social and religious duties, and each possessed its own special totem. Sometimes one clan would possess two or more totems, at others the same totem would be reverenced by two or more tribes. No native was allowed to speak evil of, or injure, the totem of his clan under penalty of death. Totems were introduced to Mer and distributed among the clans by *Malu*.[1] The following is a list of totems with the tribes who reverenced them, the residence of the tribes, and their respective duties, social and religious :—

Totem.	Clan.	Residence.	Duties.
Omai (dog)	Meuram le	Miki	To imitate dogs (in dance).
Gereger (sun)	Oparam le	Zaub	To imitate rising and setting sun.
Doumer (Torres Straits pigeon)	Komet le	Sebek	To imitate Torres Straits pigeon.
Beizam (shark)	Piadaram le	Las	To arrange time, place, and purpose of meetings.
Uarup (drum)	Zagareb le	Ulag	To beat the drum.
	Meuram le	Babud	
	Geuram le	Er	
Uasuas (?)	Dauareb le	Waier, Dauar	To build sacred houses.
Tebud (friend)	Dauareb le ...	Peibri	To prepare food.

II.—GOVERNMENT, LAWS, &c.

The head chieftainship (*kerem opole*) was hereditary. If there was no son the title passed to a brother. Failing an heir, the entire tribe would assemble and elect a successor. Women were eligible, but no remembrance of any female chief exists. In the case of minors regents were appointed. The duties of the *kerem opole* consisted of the administration of justice, and going to war. In the latter case he would be surrounded by a bodyguard of natives for protection. In addition, there were also two inferior chiefs who acted as advisers to the *kerem opole* and as go-betweens in all matters affecting the relations of chief and people. Like the *kerem opole* their office was hereditary. Justice was administered at Sebek or Las. In the event of a crime being committed, the matter would be reported to the head chief, and he would at once hold court and pronounce judgment. For crimes such as robbery, murder, &c., payment was made by the culprit, assisted by his friends, in food, &c. Of this fine a certain portion was retained by the chief, and the rest handed over to the injured party. Repetition of the offence, or failure to pay the fine inflicted, generally resulted in a penalty of death. In adultery or rape, the chief did not interfere, but the husband and friends would fight with the seducer and his friends. In cases of fornication, the girl was killed by her friends, who would then attack and attempt to kill the seducer also.

[1] See "Legend of Malu."

III.—Land Laws, Property, &c.

The chiefs held only their own hereditary lands, but the first fruits of all cultivated lands were presented to them as their share. When parents died, or became enfeebled with age, their land and property were equally divided amongst the children, male and female. In the event of the owner dying unmarried, the property (if deceased was a male) went to the eldest brother or (if deceased was a female) to the eldest sister. On the death of a husband the widow claims all his property. If the widow dies without children, the property goes to those who have cared for her in her old age. Property might be left to anyone even strangers or outsiders. If left to children, they would be adopted, and the foster parents would have the full use of the property until the child was of an age to look after it himself, when he might claim it. Any dispute about land would be settled by the old men, who would meet and discuss the point in dispute and then pronounce their decision. Land was never sold, but could be leased, when, if used for planting, a share in the first fruits would be paid to the owner.

IV.—Religious Ideas.

Certain objects were regarded as sacred, and were known by the generic name *Ad*. These might be stones, shells, fish, animals or other natural object, or even a figure made to represent something. These objects were not regarded as possessing any power in themselves, but merely as representing some great spirit. Petitions presented to the *Ad* would be answered by the spirit it was supposed to represent. The same spirit would sometimes manifest itself in various ways. In worship, presents of food would be taken and formally presented to the *Ad*. Prayer would then be offered, after which the food would be solemnly eaten by the petitioner. The spirit of the *Ad* would then do what was required.

The Chief Spirit of the natives was named *Malu*,* who manifested himself in various ways. Sometimes he was benignant, merciful, and helpful, and he was then known as *Agud*. The *Ad* of *Agud* consisted of the figure of a man made of turtle shell, which was hung up in the sacred house at Las. Prayer was offered to it for good seasons, protection during absence from home, strength in fighting, &c.; and women would return thanks for safe delivery in childbirth. At the beginning of harvest all the island would assemble for worship, when the *Ad* would be worn in the head of the chief, his prime ministers steadying it from the back. This was the only periodical worship.

At other times *Malu* would appear as an angry and vindictive spirit, and he would then be known as *Magur*. At night the natives would hear a noise like the cracking of fingers, or the clapping of hands, and they would then say, "*Magur is near.*" Filled with fear and trembling, they would throw food in the direction of the sound, crying "*Go, great Spirit, go. Thou hast plenty. Go back to Las!*" The real cause of the noises is uncertain, but the natives say they never hear them now.

* See "Legend of Malu."

The Soul.—The spirit of man could leave the body during sleep and wander at will, as in dreams. In sickness or death the spirit might go to distant friends and warn them of what was happening. After death the spirit could assume the form of an animal.

Future state.—At death the spirit would leave the body and go to the island of *Boigu* (Talbot Island) or to *Beg*, the mythical abode of departed spirits, the native paradise, where everyone is bright and happy, with plenty of food, and no work. No food was supplied for the spirit's journey. Spirits of the departed do not return except to dying friends, to whom they appear and beckon to come. Only the dying could recognise the spirits, who might appear as dogs or other animals. No distinction was made as to the future abode of good or bad spirits. Evil was supposed to originate with the sorcerers.

V.—SORCERY, DIVINATION, TABOO, &C.

Disease, death, and trouble of all kinds were attributable to the evil influence of the *maide le*, or sorcerers, and such influence could only be averted by liberal payments. The influence of the *maide le* was invariably for evil. In addition to these there existed also a sort of inferior priesthood called *zogo le*, who practised divination, and were supposed to have the power of ensuring success in various undertakings. The various *zogo* (divination or charm) were as follows:—

Zogo.	Zogo le.	Remarks.
Tumog	{ Komet le / Geuram le }	If any person died, the *tumog* was consulted as to the cause. The *zogo* was at a place inland, where a number of large shells, placed in a large circle, represented the various villages. The diviner would sit and watch the shells, until a *mona*—a small lizard—would run out of one of them; the shell from which the lizard proceeded being carefully noted. Presently from a second shell another lizard would appear, and the two would fight. If one was killed it would be regarded as a proof that the person had been killed by someone from the village represented by the shell out of which the victorious lizard issued. The friends of the deceased would then proceed to that village and demand payment for the death of their friend, or fight. Should no lizard appear, after watching for some time, the diviner would declare that the deceased had died from sickness and not from foul means.
Kaba (banana)....	Dauareb le	If bananas were not growing well, a gift of bananas was taken to the *zogo le*, who would *zogo ikeli* (make a charm) in order that the fruit might become more plentiful. This gift of bananas was called *ausmer leuer*.
Neuer (girl)	{ Geuram le / Dauareb le }	Originally the same as *Kaba*, but a part of the priesthood seceded and formed a separate *zogo*. The gift and purpose were the same as preceding.
U (cocoanut)	Zagareb le	To ensure plentiful supply of cocoanuts. Nuts were offered as presents.
Leuer (yams)	....	To ensure plentiful supply of yams.
Nam (turtle) ...	(1) Meuram le (2) Some from each village	At *beginning* of turtle season a present of food was taken to the *Meuram le* to ensure abundance of turtle. When, as at the close of the season, turtles were scarce, some of the natives from all the villages met at Waier and offered presents of food.
Galbol (whale)....	Dauareb le ...	(1) To keep whales from destroying their canoes, or (2) to ensure the canoes of their enemies being destroyed.

In the above *zogo* it will be noticed that the priesthood consists of certain members of the various clans.

For the protection of their property, the natives would place a "taboo" (*sab*) upon it, the following being some of the principal, the second column denoting the villages where they were used:—

Sab.	Locality.	Remarks.
Tabo (snake)	Sebek to Kiam and Er to Uerbabu	A fence was made around the property, and anyone stealing therefrom would be killed by a snake.
Maber (conch shell)	Ulag	Offenders against this would be killed by the Ulag people.
Nam (turtle)	Las	Offenders would be killed by Las people.
Uakai (cuscus)....	Kop to Mek	Offenders against this would be killed by the people of the district.

VI.—MARRIAGE CEREMONY.

A young man, having seen a girl he desired, would prepare a medicine from certain native trees (*kusibager, mar, pekiau, kerakera, pas, ogo, kokuam, mauteb* (female)). A very small portion of the leaves of each of these would be chewed and mixed with cocoanut oil or turtle oil and heated. A very little was then eaten, and the remainder rubbed over his body, after which he would go off to the dance. The girl, seeing him, would probably desire him and would inform a female friend of the fact. The friend (*map le*) would seek out a friend of the young man, and try to arrange matters, the girl's parents remaining in total ignorance of what was going on. In the night the girl would sham sleep to deceive her parents, but would really be on the alert for some signal from her lover. The young man, with a few friends, would secretly visit the house of the girl at night, and, on giving the signal, the latter would creep out of the house, and the two lovers would run away and hide in the bush.[1] In the morning the parents would miss the girl and go in search of her. The *map le* then calmly informed them of what had happened, and the parents, calling on their friends to help, would rush off to the village of the abductor of their daughter, brandishing their clubs and spears, and a fight would ensue, but very rarely was anyone injured. The lovers meanwhile remained in hiding pending the result of the fight. The parents of the girl having vindicated their rights, returned to their own village, and a conference was held as to the amount to be paid for the girl by the bridegroom and his friends. The *map le* would then arrange a feast, and the friends were asked to contribute gifts of food, &c., which were brought and piled up in heaps on the ground. The female *map le* would then fetch the bride and seat her on a mat placed in a central position. This being done, the female friends of the bridegroom would bring presents of newly-made grass petticoats and pile them in a heap by the side of the

[1] Hence the native word "to marry" (*ispilu*) really means "to hide."

bride. The latter would then stand up, and one of the women would begin to put the green petticoats on her, putting one on the top of another until they reached the heart. By this time the weight of the petticoats had increased so as to render it impossible for the poor girl to stand without assistance, and she had to sit down. Next, necklaces of dogs' teeth (*susueri*) were hung in profusion around her neck, her head, shoulders, neck and breast being first anointed with a mixture of red ochre and cocoanut oil. The adornment of the bride being complete, the friends of the bridegroom would prepare some food and call upon the bride's relations to come and "shake hands" (*tag augatem*), and a procession was formed for this purpose. The bridegroom pretended to be greatly ashamed, and hid his face, holding out his hand to be shaken, the bride remaining seated in her place on the mat. In the procession, the sister of the bride (if any) came first, then the mother and father, then relatives and friends. These all brought their presents and laid them at the feet of the bride, shaking hands with her as they did so. After this the parents of the bride took a share of the gifts and departed, the weeping bride crying out "*Bakeamu! bakeamu!*" ("Go! go!") Seeing the bride weeping, one of her friends would go and sit by her side to comfort her. Food is again brought by the friends of the bridegroom and the bride distributes it, the husband remaining in his place apart. After the food distribution the bride is carried off by the women to a house set apart for the purpose, the husband going with his male friends to the men's quarters. Then begins a period of instruction in the duties of husbands and wives, the bride being taught by the old women and the bridegroom by the old men. This lasts some days, during which the husband is fed by his mother, and the bride has to feed her husband's friends. After a few days the grass petticoats still worn by the bride become dry, and that is the signal for the proceedings to be brought to a close. The superfluous petticoats are removed, and the friends then leave the bride and bridegroom alone. The wife would shyly offer her husband food, and he would bashfully accept. They would then eat together, and from that time they would be regarded as man and wife. The ceremony had no religious significance.

Marriage was not permissible in the same family or between relations (*e.g.* cousins, uncles, aunts, &c.). At first the married couple would live with the husband's friends, but afterwards would alternate and sometimes stay with the wife's relations. The duties of the husband consisted in fighting, fishing, making houses, preparing plantations, &c., those of the wife consisting in looking after the plantation (weeding, &c.), fetching food and water, and the usual household duties. The wife retains her own "totem." The children may take the "totem" of their mother's sister or that of their father.

Polygamy was common, but polyandry unknown. The first wife was regarded as the chief, and superintended the work of the others. Divorce was permissible for adultery on the part of the wife, but the wife could not divorce her husband. Prostitution was considered a vile offence, and prostitutes were either killed or thrust out of the village. In the event of a single girl becoming pregnant, she

would remain away from her friends until the birth of the child, when it would be strangled and thrown into the sea. If a man and woman lived together without marriage, it would soon be known, and a friend seeing them constantly together would inform all the people. Having prepared a little bush paint he would then, in the presence of all the people, make a mark on each of their shoulders, after which they would be recognised as husband and wife.

VII.—Menstruation.

The moon was supposed to be a young man who at certain periods defiled all women and girls, causing a bloody discharge. The women reckoned their time by the moon. If they were irregular they had native medicines to correct it. Absence of the menstrual function was not considered a hindrance to marriage. No special custom was observed on a girl's attaining the age of puberty.

VIII.—Childbirth, &c.

As soon as a woman felt the labour pains, she would send for a female relative, who would act as midwife, and the two would go to some secluded place near by where the child would be born, the mother preserving a kneeling posture during the whole time. If the birth was delayed, the husband would seek the aid of a sorcerer, who would take some sacred object, *e.g.* a spear, and put it in the sea, when the child would be born. Or the husband himself would be sent by the midwife to stand in the sea, and as soon as his legs felt cold the child would be born. The sister of the husband would receive the child as soon as it was born, and, the navel-string having been cut with a bamboo knife, the mother would go down and sit in the sea until the afterbirth came away. If the *placenta* did not come away, the woman was taken back to the house, where she would drink only water, and at the sunset would return to the sea. If that was unsuccessful, she returned again at sunrise. If it did not come away, then the mother died at sunset. Should the afterbirth come away all right, the mother rested quietly in the house, and burnt *nargai* leaves were placed on the abdomen to cause contraction of the uterus. The woman was not considered unclean after childbirth, nor was any ceremony necessary for her readmission into society. In case of twins the first child born was preserved and the second was destroyed. Triplets, &c., were unknown. In the case of stillbirth the body of the child was dried and hung up in the wind. Sometimes it was painted. Albinoes were unknown. The greatest number of children by one mother was eleven. Birth marks were supposed to be caused by the pregnant woman eating a certain kind of fish (*komsar*), the juices of which touched the child and caused the mark (*komsar gole*).

After a certain number had been born, all succeeding children were destroyed, lest the food supply should become insufficient. If the children were all of one sex some were destroyed from shame, it being held proper to have an equal number of boys and girls. Abortion was very common, for various reasons: sometimes (as

in the case of a single girl) from shame, sometimes to save the mother the trouble of child rearing. For the purposes of abortion the leaves of certain trees were chewed. The leaves of the *sesepot, mad leuer, ariari* and *ap* were sometimes mixed with cocoanut milk and drunk. This caused little or no pain. Failing that, the leaves of the *tim, mikir, sorbe, bok, sem* and *argerger* were chewed together. This medicine caused great pain, but killed the child. When medicine failed harsher measures were resorted to. Sometimes the abdomen would be beaten with big stones, or the woman would be placed with her back against a tree, when two men would take a long pole, and, taking either end, would place it against her abdomen and by sheer pressure crush the fœtus. It need scarcely be added that such treatment frequently killed the woman as well.

IX.—Child-Naming.

When the child was about a week old, friends were invited to a feast called *delek*, where a name would be decided upon. Sometimes they could not agree; and as each stuck to the name of his or her selection, the child would be called by several names. Generally the child was named by the wife's sister or by the husband's mother. In the event of the death of both the parents the child would be adopted by the father's family.

X.—Death and Burial Customs.

As soon as death occurred in a household, messengers would be at once despatched all over the island to make the fact known, and everybody would come to join in the mourning. The body would be laid out by the near relatives—men performing the office for men, and women for women. The body laid out, the whole of the people would then sit and wail for the departed, and the wailing would be kept up until the body began to swell and the juices escape. It was then carried down to the sea and disembowelled, the brain and entire internal parts being removed, and the body cleaned. It was then tied to a bamboo frame and exposed to the sun to dry. Eventually it was placed on a raised platform exposed to the sun, where it soon assumed a mummified appearance.

XI.—War.

The Murray Islanders were noted for their fighting propensities, and frequent raids were made by them on the neighbouring islands and on the mainland of New Guinea, in the Fly River district. Their principal weapons were clubs, spears, and bows and arrows, most of which were procured from the Fly River natives. The skulls of their slain enemies were preserved as a proof of their success. All adult males went to war. Charms were worn for protection, and the aid of the diviner was frequently called in to prophesy as to the prospect of success.

XII.—Food.

The vegetable food of the island included cocoanuts, yams (several varieties), sweet potatoes, bananas, sugar cane, and several indigenous fruits. Pigs, birds,

fish, dugong, shell-fish, turtle, crustacea, &c., are also eaten. Pigs and fowls have been introduced by foreigners. All foods might be freely partaken of by the natives, except their own totem, which was sacred. Occasionally, under special circumstances, such as going to war, or on a long journey, the natives would fast. Food was prepared by boiling in a large clam shell (hot stones being placed in the liquid to heat it), by roasting over the fire, or by cooking in the native oven. This consisted of a small circular hollow in the ground in which stones were first heated in a fire, and, when almost red hot, these would be removed and alternate layers of stones and food would then be piled up, the whole covered over with a thick layer of leaves and earth. After leaving the food for a certain time—about an hour and a-half—it would be taken out cooked. Water being scarce, cocoanut milk was generally substituted for it for purposes of boiling, &c., thereby imparting a delicate flavour to the food. Men, women, and children ate together, banana leaves generally being used as plates.

XIII.—Arithmetic.

The only native numerals are *netat* (one), and *neis* (two). Any higher numbers would be described either by reduplication, *e.g. neis netat*, lit. two-one for three; *neis-i-neis*, lit. two-two for four, &c., or by reference to some part of the body. By the latter method a total of thirty-one could be counted. The counting commenced at the little finger of the left hand, thence counting the digits, wrist, elbow, armpit, shoulder, hollow above the clavicle, thorax, and thence in reverse order down the right arm, ending with little finger of right hand. This gives twenty-one. The toes are then resorted to, and these give ten more. Beyond this number the term *gaire* (many) would be used; and if it was necessary to be exact, *kupe*, or tallies, would be used. English numerals are now in general use.

XIV.—The Legend of Malu.

On the Island of *Muralug* (Prince of Wales Island) there once lived four immortals, brothers, named Malu (the eldest), Seo, Sigar, and Kulka. One day the four brothers went out to a reef called Tediu (between Paremar and Waraber Islands) for the purpose of fishing. A strong wind caused Sigar's canoe to drift, and, finding it impossible to make Tediu, he called out, "I'm going to Yam Island." The remaining three proceeded to Aureid Island, where Kulka decided to remain. Malu and Seo continued their journey until they reached Masig Island. Here Malu got into disrepute by defiling the women and girls. Seo expostulated with his brother, who, in his anger, seized his spear, pierced Seo through the back with it, and then threw his body into the sea. The natives afterwards found Seo's body and buried it. Malu, finding himself in disrepute, left Masig and sailed on in the direction of Mer (Murray Island). When a little to the west of Mer, a heavy sea caught the canoe and it was broken up. Seizing a part of the gunwale he used it to assist him in getting ashore, and landed at Umar, where the natives seized him, and invited him to remain. He consented, and they built a stone fence

around the spot where he arrived. They then went into the bush to procure him food. During their absence he thought the place they had made was too near the sea for him, so, plunging into the sea once more, he proceeded to Giar ge (Dauar). But here he found the same objection as at Umar, and, after trying at the other side of Dauar, he swam round Waier and proceeded to Aud on Mer. At that place there lived a man named Dorg and his wife Kabur. The latter one day while fishing on the reef saw what appeared to be a canoe coming towards her. Thinking it to be some natives from Waier she at first took no notice; but when she looked up again, she saw the canoe had disappeared, and in its place was merely a floating piece of wood. Thinking it strange, she watched the piece of wood to see if it changed its appearance again. Meanwhile, Malu had seen the woman, and his amorous inclinations led him to change himself into an octopus and approach her in that form. With the inflowing tide he swam to her, twining his long arms around her legs and thighs; then, loosening his hold, he was carried out to sea again by the receding waves. This was repeated two or three times, until Kabur, suspecting there was something supernatural in it, suddenly skewered the octopus, and, putting it into a basket, carried it ashore and placed it in a pool in the rocks. Then, calling her husband, she told him she had found a *zogo* (sacred object or totem) for him. Dorg proceeded to the pool, and taking out the octopus, skewered it, and hung it up in a basket in the house.

In the evening, after supper, they retired to rest, but decided to keep awake and watch. Presently they heard a sound like the wind in shells, and, on looking up at the basket, saw two eyes gleaming like fire. Frightened and trembling they clung to each other, and they saw the octopus fall to the ground, where it changed into a man, and in that form went outside and walked all round the island, returning to the house. On his return the peculiar sound was heard again, and they saw Malu again change himself into an octopus, and in that form disappeared into the basket. In the morning Dorg said, "I will adorn myself and show myself to my friends, that they may see I have cause for rejoicing," to which Kabur replied, "Yes, go!" Kabur helped her husband adorn himself, and he then started to visit his friends, leaving his wife to take care of the new *zogo*. This she did by washing herself, and, having painted her face, sat herself down to watch. On his return Dorg asked his wife if anything fresh had taken place, to which she replied, "No." The strange conduct of the *zogo* was repeated that night, and the next morning Dorg again visited his friends, leaving his wife to watch. This was repeated several days, and, as Dorg had not told anyone why he had dressed himself up, the natives soon began to pass remarks on his strange conduct, and two young women named Dam and Samekep, sisters of Kabur, were deputed to go and find out the meaning of it all. The two girls resolved to visit their sister, and so time their visit that they would have to stay the night. This they did, and at night Malu repeated his strange behaviour, and the girls saw him, the sight filling them with fear and trembling. In the morning they said "Good-bye," as if returning home; but after going a short distance, they returned secretly to watch. They saw

Dorg and Kabur again adorn themselves, the former going out to exhibit himself before his friends and the latter to watch before the door. As soon as Dorg had disappeared, the sisters, creeping noiselessly to the rear of the house, began to remove the thatch, and through the hole thus made Dam entered, leaving Samekep outside. Dam quietly took down the basket containing the *zogo* and handed it to Samekep outside. Having got outside herself, Dam wanted to take the *zogo* herself, but Samekep refused, and they went off together.

Meanwhile Dorg, in going his rounds, noticed that his body did not perspire as usual, and fearing something was wrong he hurried home. His wife assured him that nothing had occurred, but, on going round the house, they noticed the thatch removed, and the basket, with the *zogo* in it, gone. Finding their treasure stolen they at once dressed in fighting attire, and with their weapons proceeded to seek vengeance. At Las they found the people assembled, and on their enquiring the meaning of their appearance in fighting attire, Dorg, after ordering the women to sit apart from the men, told them the story of Malu's appearance and disappearance. On hearing the story the people unanimously decided to adopt Malu as their chief *zogo* or *ad* (god).

Shortly after this the people of Nagir and Muralug sent out five canoes to search for Malu and his brothers, and they traced Malu to Mer, where they stayed. The Mer people supplied them with food for some time, but, as the visitors showed no signs of leaving, they soon became impatient. Their shoulders were sore with bringing food, and they did not even get so much as a *kap* (dance) in return. One day, however, the visitors all went down to their canoes, out of sight of the Murray Islanders. Presently from one of the canoes several men came, dressed up and imitating the movements of dogs (*omai boai*); then from a second canoe came others imitating the rising and setting of the sun (*gereger boai*). Next came some imitating the Torres Straits pigeon (*doumer boai*). Lastly, there came several with drums (*uarup boai*), and a few who acted as masters of the ceremonies (*beizam boai*). Having gone through the various dances, they then taught them to the Murray Islanders, who were thus divided into clans according to their several dances or duties. The visitors then explained their mode of worship, and agreed to leave Malu as the *zogo* of the Murray Islanders. Ever since then Malu, in his twofold manifestation of Magur and Agud, has been the principal deity of the island.

XV.—The Legend of Pekari and Sid.

In the village of Ulag (on Mer) there once lived a maiden named Pekari, who, on account of her charms, was much sought after by the young men, but none of them gained her affections. At length there came to Mer a young man named Sid or Said from Boigu (Talbot Island), who had set out in search of a wife, visiting the various islands, but failing to meet with any damsel he considered suitable. He eventually reached Mer, landing at Umar, and making his way over the hill to Las, where lived a friend of his named Kobai. While on his way he saw some men

in the bush planting food. Sid offered to help them, and at once gave them some yams and bananas to plant. At Meseriam, Sabed and Sauerem—other places that he passed—he also assisted the people, and gave them yams and bananas to plant for food. (This is how yams and bananas were introduced on Mer. Cocoanuts were then unknown.) Proceeding on his way, Sid heard shouting, and on asking the meaning of the noise learnt that it was caused by the numerous lovers of Pekari, who had adorned themselves in the gayest fashion and were sporting themselves in the village. Sid went on his way, and, on reaching Las, asked his friend about this noted maiden Pekari, and on hearing his friend's report he at once proposed that they should adorn themselves and pay her a visit to see if she would suit him. They therefore made their way to Ulag, and when the young men saw them coming they at once started to meet them. But Pekari bade them to stop, and went to meet them herself, so that she could see who the stranger was. As soon as Pekari and Sid met they fell in love with each other, and Pekari begged one of her female friends to make known her love. Sid was only too ready to respond to her overtures, and arranged to visit her at night. At the time appointed Sid proceeded to Ulag in a canoe, and on his arrival there he invited Pekari to join him on board. But Pekari refused, and Sid left his canoe and went ashore, the girl asking him to lie with her on the beach, with their heads towards the bush. The next morning, when the natives awoke, they heard the sound of wind in the trees, and on going out they found a number of tall, stately trees (cocoanuts) had sprung up in the places where the scattered semen had fallen, and realised at once that Sid was an *ad* (god).

Meanwhile Sid had started off to make fresh conquests, and, as he strolled along the beach, he saw two young men fishing for *uere gole* with baskets. The names of the men were Abob and Kosi, who lived with their mother Kudar. Hearing of the mother Sid determined to visit her, and, if possible, add her to his list of conquests. Wishing to have the way clear, he told the young men that at a certain place, a long way off, he had seen large shoals of fish. They at once started off, and Sid made his way to the house of the mother, to whom he made overtures. Kudar, however, refused him, and in his anger he stabbed her in the neck with a cassowary-bone dagger, and placing her body in a basket took it with him into a canoe and started off again. Meanwhile, the two sons had fished in vain, and suspecting foul play they returned to find their mother and Sid gone. Changing themselves into fish, they at once set out after Sid, who, when he saw them coming, threw the body of Kudar overboard, where it became a rock, and changing himself into a bird he flew up into the air and disappeared.

Finding themselves outwitted, Abob and Kosi returned home to Ulag and resumed their daily duties. One day Abob told Kosi to fetch some firewood, and on his refusing Abob himself set out, going up the hill to the highest point of the island, and gathering wood and grass as he went. When he reached the top he saw across the straits the little island of Dauar, and he determined to visit it in his canoe. Kosi, finding his brother did not return, went to seek him, and traced

him by the grass Abob had let fall to the ground. On reaching the top he espied his brother crossing the straits in his canoe, and hastily making himself a pair of wings with grass, he flew away and alighted on the canoe, very much to the surprise of Abob, to whom Kosi proposed that they should fight the people of Dauar. Having landed, they made their way round the island, where they met an old woman, Gaue, who asked them to punish her grandchildren, who had neglected her and refused her food. Dressing themselves in war attire, the brothers armed themselves with long poles, and going over to the little island of Waier close by, they smote the island with their long poles, causing great fissures, and the old woman's grandchildren were killed. Then proceeding to Er (on Mer) they built a big fish enclosure (*sai*) with stones, reaching to Kiam. From the latter place they saw Erub (Darnley Island) in the distance, and they determined to go there. The Erub people spoke the same language as Mer, but, as they were anxious to change it, Abob and Kosi suggested that they should speak it much slower than the Mer natives. Here also they made a *sai*, as at Er, reaching from Mauer to Kemus. From Erub the brothers then proceeded to Ugar (Stephen Island), but before doing so changed their names to Kulkar (Abob) and Dibir (Kosi). At Ugar they taught the natives to speak the Mer language even more slowly than on Erub, so as to make a distinction. They then made their way to Zamud (or Damut) (Dalrymple Island), where they were known as Pati and Enage. Here they taught the people their language. Changing their names again to Ui and Sinarue, the brothers once more resumed their journey to Tud (Warrior Island), where they taught the natives the Tud language. Again their names were changed to Uaiau and Keboi, and they went on to Parem (Bampton Island), where again they acted as instructors in the language. Finally changing their names to Badai and Kebor, they went on to Kiwai Island, where they remained. In each place they visited they either taught a new language or suggested a better way of speaking the old.

NOTE.—The main object of this legend seems to be the explanation of the origin of food in Mer (*i.e.* yams, bananas, and cocoanuts), the building of the large stone fish enclosures (*sai*), and the origin of the various dialects on some of the islands.

XVI.—DISCOVERY OF THE USE OF COCOANUTS AS FOOD.

At Mergar (on Mer) there lived a man named Gedori. One day, seeing that the cocoanut trees had increased very rapidly, he determined to cut some of them down, as he was not aware of their value. One of the nuts rolled into the sea, where it floated about, bobbing up and down. Gedori, thinking it a fish, speared it, the three prongs of the fish spear penetrating the holes at the base of the nut. When he found it was only a nut he threw it angrily down, and the nut was broken open. Seeing the white kernel inside, he wondered if it was good to eat; and scraping a little off, he threw it on the ground, where the ants soon devoured it. Seeing that, he then tasted a little himself, and, finding it palatable, soon devoured the whole nut. He then reported the matter to the other natives, who

were at first sceptical; but on seeing Gedori eat it without apparent harm, they all followed suit, and soon the cocoanut became one of their chief dishes.

XVII.—DISCOVERY OF FIRE.

On one of the islands near the mainland of New Guinea (Doudai) lived a woman named Sarkar, who had fire between her finger and thumb on the right hand. One day some men fishing saw smoke rising in the island where Sarkar dwelt, and they decided to go and explore, and if possible find out the secret of this mysterious power. After considerable dispute amongst themselves as to the best means of acquiring the desired information, they decided to change themselves into animals. They therefore took the form of the *mokes* (rat), *mona* (lizard), *tabo* (snake), *si* (iguana), *zira* (?), *ked* (?), and *karom* (?). The heavy seas soon caused the *mokes*, *ked*, *zira*, *si*, *tabo*, and *mona* to give up the attempt. The *karom*, however, kept on, and ultimately landed near to the place where Sarkar lived. Going up to the woman in the form of a man, he asked, "Have you any fire?" to which she replied "No!" for she was anxious to keep her power a secret. Sarkar brought her visitor food, and having eaten, he laid down to sleep, but he took care to sleep with one eye open. Presently he saw the woman strike some fire from her hand on to some dried leaves and wood, and they were soon alight. The next morning he decided to leave, and said to Sarkar, "I am going; shake hands!" She offered her left, but he refused, and asked for the other. She then offered her right, and as she did so, the man suddenly drew a bamboo knife and cut her hand off, plunging into the sea with his prize. When he reached his own place he tried to make fire and succeeded. Some trees saw him make the fire, and went to look at it. Some of them, the *kizo*, *seni*, *zeb*, *marep*, and *argergi*, took some of the fire with them, and ever since that time these trees have possessed the power of producing fire.[1]

DISCUSSION.

In reply to several remarks, Mr. HUNT said:—I would like to say just a word in reply to the President's remarks in reference to the very rapid decrease of the Murray Island natives. My own experience, gained by ten years' residence in Polynesia and New Guinea, is that the advent of the white man is invariably followed by the gradual extinction of the native race. Unintentionally, perhaps, but none the less certainly, the white man carries with him wherever he goes, causes which ultimately destroy the native population. Foreign foods, foreign clothing, intoxicating liquors, foreign modes of living, and the direct introduction of specific diseases all tend to the one result. And of these I consider that the introduction of foreign clothing is one of the most fatal. In this matter the missionaries have to bear a share in the responsibility. Invariably adopted from a love of display rather than from any other reason, the native generally wears his foreign clothing during the day-time. Then at night, when it can no longer be

[1] The trees mentioned here are those formerly used for producing fire by friction.

seen, he throws it off, and sits in the cool night air, wet or fine, without anything on. The natural result of this exposure is the introduction of pleurisy, pneumonia and other chest and lung diseases which cause terrible havoc. With regard to Professor Haddon's criticism on my reference to the spear as one of the war instruments of the Murray Islanders, I can only say that I have purchased spears myself in the island; and in the vocabulary published by Professor Haddon himself the word "*dab*" occurs, which is interpreted "a spear, a war spear." These facts I think justify me in including the spear in the list of weapons of war.

MARCH 8TH, 1898.

F. W. RUDLER, Esq., F.G.S., *President*, in the Chair.

The Minutes of the last Meeting were read and signed.

The election of T. H. WILSON, Esq., WM. PARKIN, Esq., and M. H. NAZAR, Esq., as Fellows of the Institute, was announced.

The PRESIDENT introduced the Hon. DAVID W. CARNEGIE, who had lately returned from an exploration in Western Australia, and who proceeded to describe a large collection of ethnological objects which he had brought home. These consisted of shields, boomerangs, spears, chisels of flint fastened to handles by Spinifex gum, message sticks, plumes of emu feathers, bandages composed of hair, red paint and grease; also many arrow heads, some chipped from broken glass bottles, which showed extraordinary skill.

A discussion ensued, carried on by Mr. EDGE-PARTINGTON, Mr. C. H. READ, and Mr. R. B. HOLT.

The PRESIDENT, in thanking Mr. Carnegie for exhibiting and describing his collections, referred to the extraordinary determination shown in traversing a sandy inhospitable desert, part of which had never before been visited by Europeans.

The PRESIDENT then called attention to a very interesting series of photographs of Australian Dilly Baskets sent by Mr. ROBERT ETHERIDGE, of the Australian Museum, Sydney.

Mr. T. V. HOLMES read a paper by Mr. W. DUNLOP, "On the Folklore of the Native Australians."

The thanks of the Meeting were duly accorded to Mr. Etheridge, Mr. Dunlop, and Mr. Holmes.

ON A BARK-BUNDLE OF NATIVE OBJECTS FROM WESTERN AUSTRALIA.

By the Honble. David W. Carnegie, F.R.G.S.[1]

[with plate I.]

A BARK-BUNDLE, or native portmanteau, brought unopened from Family Well, nearly in the centre of the Desert of Western Australia, was unwrapped on my return home, and found to contain the following objects:

(1) A smaller "portmanteau," 12 inches long, in which lay a fine specimen of a quartz-knife, carefully wrapped in down and emu feathers.

(2) A second small bundle, 6½ inches long; in this two flat stones of what I suppose to be "serpentine" or "soapstone" were found.

Both stones are flat and thin, and have been worked into shape. The long one (Fig. 1, Plate I) is uncarved. The smaller one (Figs. 2 and 3, Plate I) is, roughly speaking, circular, and has a rude pattern carved upon it, as shown in the figures.

This carved stone is, I believe, a great rarity; for though carved wooden sticks are frequently found, stones with patterns upon them are exceptionally rare.

Colonel Warburton in his journal of his crossing of the West Australian Desert, mentions two sandstone tablets which he found hidden in a hole on the summit of an ironstone hill, one day's march from the Waterloo Wells, not far from the border line between West and South Australia. The description of these stones is as follows; and it will be seen that the shape of these corresponds with that of the first stone mentioned by me:

"These slabs were thin, flat stones, measuring about 15 inches by 6 inches, of an oblong shape and rounded at the ends. They were marked with unintelligible scrawls, and were secreted in a hole from whence Col. Warburton ferreted them out, in company with a spherical stone about the size of an orange. No clue could be gained as to what they meant, or why they were deposited there. Unfortunately these interesting objects had to be thrown away before the termination of the journey."

So far as I can learn the significance of these stones still remains a mystery. It seems more than probable that the stones in my possession are the only ones

[1] This paper was received subsequently to the exhibition of specimens at the Meeting of March 8th.

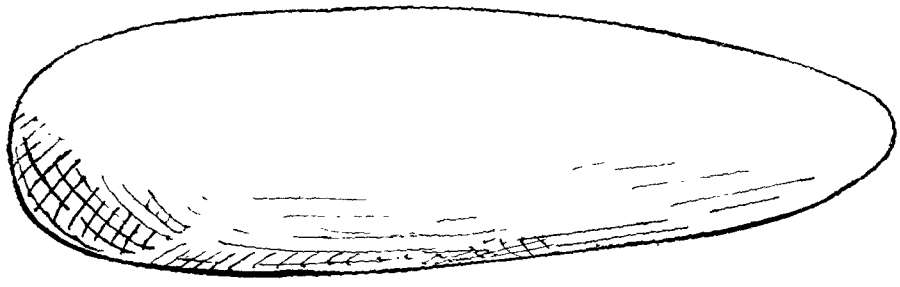


FIG. 1.

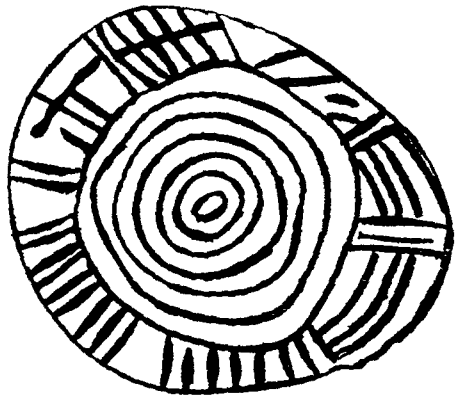


FIG. 2.

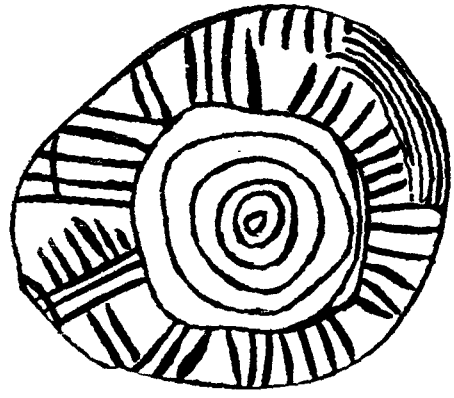


FIG. 3.



FIG. 4.



FIG. 5.

OBJECTS FROM A NATIVE BUNDLE, WEST AUSTRALIA.

that have found their way into civilisation. The extreme care bestowed upon their packing suggests that they are considered of more than ordinary value.

(3) A third small "portmanteau" containing two small sticks upon which patterns have been burnt (Figs. 4 and 5, Plate I).

(4) Fragments of sharp-edged quartz, suitable for chisel heads and similar tools.

A white tuft of hair, probably that of the dingo, forming a tassel to hang from the beard.

Fragments of red and yellow ochre.

Dried pieces of the weed from which the chewing-ball is made.

The whole bundle is 20 inches long by 12 inches in circumference, and was tied up in the usual way with hair-string, a skein of woven opossum wool serving to keep the contents in place.

Explanation of Plate I.

Fig. 1. Flat thin worked stone, $4\frac{7}{8}$ inches long.

Figs. 2 and 3. Two sides of a stone disc, showing the pattern carved upon it. Natural size.

„ 4 and 5. Two small sticks on which a pattern has been burnt. Fig. 4 is $4\frac{1}{4}$ inches, and Fig. 5 is $4\frac{3}{4}$ inches in length.

All these objects were found inside the native bundles from Western Australia.

EXHIBITION OF PHOTOGRAPHS OF SOME NORTH AUSTRALIAN DILLY BASKETS. By ROBERT ETHERIDGE, Junior, of the Australian Museum, Sydney.

THIS collection of photographs represented a number of dilly baskets from the East Alligator River, at its outflow into Port Darwin. The baskets were obtained chiefly by Mr. Harry Stockdale, of Sydney. The ornamentation presented an extremely interesting study in aboriginal decorative art. The baskets were of plaited work, painted red, white, yellow, and black or brown; the ground being nearly always dark Indian red. The designs consisted of chequer work, chevrons, triangles and other geometrical patterns, with figures of various natural objects of a vegetable and animal nature, including conventional representations of the human form.

AUSTRALIAN FOLKLORE STORIES.

Collected by Mr. W. Dunlop.

These stories, illustrating the folklore of the Australian aborigines, were given to me for communication to the Anthropological Institute by Mr. Connop L. Schmitz, son of the late Dr. Leonard Schmitz of the International College. I was introduced to Mr. Connop Schmitz by Mr. T. Hay Wilson (now a Fellow of the Institute) in 1896. Mr. Schmitz told me that he had intended to write an introductory notice to the stories, but had been prevented by failing eyesight from adding anything to the few lines here given. He added that the stories had been written by Mrs. David Lyall from notes made by her father, Mr. W. Dunlop, who collected the stories from the natives soon after he settled in Australia, about the year 1830. His family are now in Australia, near Port Philip, Melbourne. Mrs. Lyall wrote out the stories at the request of Mr. Schmitz, who takes much interest in folklore, and who thought it would be a pity that these stories should be lost, as they had been collected from the natives themselves.

T. V. Holmes.

The Bunyip.

On a bright sunny day, after all the rain had passed, a party of young men went out from the camp to look for food to supply the *lubras* and children. They had their spears in their hands and amused themselves as they went through the honeysuckles and green flats by throwing their spears. The air rang with the loud young voices and cheerful mellow laugh unchecked by any fear. The country was all their own, or there were too many of them to dread an attack. There was not supposed to be any dangerous animal near; they talked of their skill in the chase, of throwing the spear or boomerang, and of how far they must walk before they might expect to see the game they sought. Presently they reached the banks of a sort of water-course, at that time a succession of dark looking pools, each surrounded by a broad fringe of high, green plants. Next to the open water grew the bulrush, the roots of which are good as food, and of these roots they proposed to gather a basket full. So a large basket woven of rushes was produced, and they were preparing to collect the soft white roots, when one of the party said he had his fishing tackle with him, and that they might leave gathering roots to the *lubras* and catch eels and black fish, and not make themselves a laughing-stock

to the old men by doing the women's work. All the party agreed with him, and some of them directly began to search for bait, whilst the rest seated themselves, and arranged their fishing lines, made from the inner bark of the Wattle or Mimosa tree, with hooks formed from bones of the Kangaroo. Bait was soon procured and they strung the poor worms on the hooks. One of them, however, had put a piece of raw meat into his basket, and without speaking of it to his companions, he cut a bit of it off with his stone tomahawk, and with that he baited his hook. For some time the fish seemed all gone from the pool, or too wary to be caught. Each looked anxiously at his untouched line, or glanced at the already descending sun, until it seemed that night would find them without the expected supply of food. The youth who had made use of the raw flesh at last saw his line disappear. He grasped it more tightly, and to his surprise felt it almost dragged from him, by a force much greater than he could at all account for. He called to the others, and with much labour and hearts palpitating with dread, they succeeded in drawing to the land a creature somewhat between a calf and a seal, but with a long and broad tail. It struggled and made a sort of complaining cry, at which its mother rose from her den in the high bank on the opposite side of the pool, and to their horror they saw that they had caught the young one of a dreaded and dreadful Bunyip. She looked at them with rage, and seemed to hesitate in what manner to release her child. Most of the young men in stifled voices begged the successful fisher to release his captive. But he was the same who had mocked at the thought of gathering roots; he was of a bold, fearless disposition, and he had promised that he would carry home to his betrothed maiden enough to make her father's camp merry for three days. He held the Bunyip calf tightly, declaring that the children of the camp should have it to play with, and that he would be the first *cooly* to bring home a Bunyip calf to his *lubra*. He dragged the strange looking creature on to land, and when he heard a yell or roar of distress and anger from the mother, he raised his spear and brandished it at her, while he continued to drag the young one after him. The mother seemed indifferent to his threats, but made beseeching signs for the release of her child. These the youth made light of, and he by degrees infused part of his own courage into the breasts of his companions, so that they joined him in striving to convey his prey to their common home. It was lifted by them on to his shoulders, and he carried it off in triumph. But his triumph was short. He heard a low rushing sound, and on looking back he saw the pool he had left slowly rising above its banks, flooding the place on which he had stood, and following the steps of the young men. The sun still shone brightly upon Mount Shadwell, the sweet-toned magpie sang merrily all around, forbidding the idea of rain. Indeed, not a drop had fallen for many days, and Mustons Creek was not subject to sudden rises, yet there were its waters already covering grass usually high above the highest flood. "Run, run," called every voice, and run the unfortunate youths did. The boldest held the young Bunyip firmly on his shoulders and fled swiftly towards his home, nor looked back until he reached a high ridge far above the valley he

had left. Then, what a sight met his view! All was a sea of dark water. The low honeysuckles were covered, the light woods with their thick foliage only for a moment ruffled the surface of the rising waves, and the gum trees that were on that bank seemed like low rushes. But flight might yet save them, and on they went, their active limbs almost sinking beneath them. They approached the place where they had first seen the light, a low cell as it were, formed of earth, the old home of their fathers. The old men of the tribe stood at the entrance, the children played around, the old *lubras* sat in groups on the dry grass listening to and telling their simple gossip. The young women stole a glance at the flying youths, who, as they drew near, showed the agony of terror and exhaustion. All hurried to meet them, old and young crowded to learn what had happened, what danger threatened them. The young men sank to the ground unable to utter a word. Fear stopped the questions from the other party, but when the young Bunyip fell, and the elders saw their dreaded, mysterious, never-named enemy before their door, all the stories of the great power and awful malevolence attributed to his kind rose before them, and they knew without a word spoken that they were lost. Then a cry arose, "the water, the water!" and the slowly creeping flood appeared. On, on, on, it came. Those that were dearest to each other rushed together in the vain hope of yielding mutual assistance. Mothers clasped their children, husbands their wives, and the young betrothed ones, who a few hours before would not even have touched each others' hands, frantically clung together in the hope that they might swim through the water, and save themselves for the happiness they had looked forward to from their earliest years. The unfortunate procurer of all this danger was one of the first to brave it. He clasped his betrothed to his breast, and stood calmly waiting the coming of the destroyer. His eye roamed over the neighbouring country. There was no hill which he could hope to reach, but he whispered, "My love, no one can climb like me, come, we shall soon be on that high tree and no water can reach us there." While he spoke the water had reached his feet; he looked down, and they were no longer feet. Claws had taken the place of the finely-formed toes, and he beheld a bird's foot instead of his own. He glanced to see if the one he loved had marked the change, and he saw a large black bird standing by his side. In despair he looked round; all his people were gone, great awkward black birds had taken their place. He tried to cover his face with his hands, but they were become the ends of long black wings: he wished to complain of the dark dream that was upon him, but his voice died away in a sound between a moan and a croak. The water had become deep, and he found himself raised upon it, swimming upon its surface, with a long neck rising from what he believed to be his broad shoulders, but a glance into the still smooth water showed him a large black swan, he was man no longer. He, his beloved, their whole tribe, were now only a flock of black swans, and never again did they regain their human form. We suppose that they are still different from other birds, for at night when they fly over our heads we hear them talk to each other, and if we walk when it is almost dark near the lakes where they live we hear

plainly the sound of women talking and laughing. They do not speak our language, so we cannot tell if they talk of their early misfortunes, but several persons have been drowned by walking into the lakes in search of people they thought they heard.

The mother Bunyip took back her child, and has been seen by many at the same bank, for the water soon receded to its own channel. She is sure to eat any one to whom she once shows herself, and few like to walk near the place where she lives. Her house is under the pool below its deepest waters, and is supposed to be very large and beautiful, but no human being has ever seen it.

The Great Fire Bird.

Long, long before my father was born, there was a bird in a high hill. The hill was very high up, almost in the sky, and the bird lived there very comfortably. In the coldest day he was happy, for he had a large fire; when he was hungry he roasted his meat at the fire, and when he had eaten plenty he lay down and slept beside the fire. But this great strong bird was very ill-natured, he would not give any fire to the poor blacks who lived near him and who never had had any fire. They were shivering with cold; the rain wet them and they could not dry themselves, and the hail fell amongst their children and did not melt; the poor little creatures were so cold. They saw the bright fire shining upon the top of the high hill, and they said that the great bird had stretched upward and taken a bit of the sun to warm himself. So they gathered the whole people together and went to the foot of the hill and begged for a little bit of the beautiful sun, that they might warm themselves as the great bird did. But he laughed at them and mocked them, and told them to get the sun from the sky. Then he threw down a large piece of kangaroo nicely roasted, and told them to eat that and learn what his little sun did for him.

They had always eaten their meat raw before, and at first they did not like the roasted meat, but in a little time they agreed that it had much more taste, and that it was much easier to tear in pieces, and did not hurt their teeth so much; besides, it was the way in which the great and wonderful bird liked his meat, so it must be the best. What then were they to do to get their meat made like this new delicacy? Even the pain of the cold and the complainings of the *lubras* and children were almost forgotten in their anxiety to have this newly-awakened desire gratified. With eager voices they renewed their petition for a bit of the sun; a little bit, only the smallest scrap. The great bird laughed, and tauntingly asked them if they wished to have themselves roasted like the kangaroo. They only called the *lubras* to join in beseeching for sun to warm them and to make the bloody meat brown and good. The clamour became so great at last that all the birds and beasts were alarmed and gathered at the foot of the hill to see what was the cause of it. The great bird looked down upon them, mocking their ignorance,

but still refused to give them any part of his fire. At last the Mina bird, the most cunning of all the earthly birds, whispered to the old men to go away and say no more about it and she would find a way of getting fire for them. So the crowd willingly separated to wait for the fulfilment of her promise. At that time blacks did not live in nice earthen *my-mys*, they had not learned how to make them. They lay down under a thick tree in winter, and beside a sunny bank in summer, and only gathered grass or soft branches to lie upon. Thus, at the time I speak of, the whole tribe sullenly betook themselves to their sheltered retreats, and strove to gain heat by creeping close together, covering their naked bodies with leaves and grass. Though great and powerful, the bird of the high hill was as much obliged to have food as the lowest and most ignorant blackman, so, after throwing all the meat he had to the petitioners, he began to remember that he would require some more for his own eating; and having watched the retiring multitude hide themselves in the bush, he wondered for a few minutes what could have so suddenly stilled their entreaties and quieted their anxiety. Then, stretching his large wings, which were like two black clouds, he soared away that he might look for some emu or kangaroo, kill it and carry its flesh home to his rock. This is what the Mina bird expected, and no sooner was the rock left vacant, than he and all his tribe flew to it, each with a small piece of the bark of the gum tree in his bill. They gazed at the unknown ornaments and conveniences with which the Fire Bird's marvellous abode was filled, but did not dare to delay long enough to enable them to describe what they had seen, though often in after years requested to do so. To steal a portion of the fire was their object, and for this purpose they had brought the pieces of bark. In these each placed a bit of live cinder and away they flew with their prizes to the place where their friends the blacks lay. But how can I tell you what followed. At first the black men looked with wonder at what they still believed to be pieces of the sun. Then some of the boldest lifted a piece in their hands. When they felt themselves burned they threw the fire from them in terror; this falling among the dried grass and branches which composed their beds, kindled a flame which was soon communicated to the bush around them. Fear and confusion took hold of the miserable beings, they knew not what they had to dread or how to escape. Some fled one way some another, but the fire followed them and seemed a living creature running along in a mysterious manner to punish them for meddling with the property of the great bird. At first, horror prevented them from observing anything, presently they saw that whatever the fire touched died away, became black, and was, as they supposed, eaten up by this new beast which had neither feet nor mouth, yet walked and ate. The flames rose higher and then the great bird appeared hovering over them and laughing loudly at their dismay. "Men," cried he, "now you will know how you like to be roasted, and I shall get plenty roasted kangaroo without the trouble of catching them." The fire spread far and wide, many of the black people were burned to death, principally children. Some of the strong men and women, running from the fire, came to a river and swam

across it; the fire could not follow them so they escaped. These watched the burning and then the extinction of the flame. Presently there remained nothing but a red cinder here and there, looking bright in the darkness, for night had come to add to the horrors of their situation. Next morning they dared not venture to go near their mysterious enemy, but some days after, seeing all quiet, they re-crossed the river, and by degrees approached nearer and nearer until at last they found some fire under a burned tree. After many trials and much fright they managed to make themselves aware of the properties and use of fire so as to warm their cold bodies and roast their prey.

And this is how the blacks first got fire.

Revenge Approved.

At one time a man took as his wife a beautiful girl, one who had long glossy hair hanging around her face and down her shoulders, which were plump and round. Her face was adorned with red clay and her person wrapped in a fine large opossum rug fastened by a pin formed from the small bone of the kangaroo's leg, and also by a string attached to a wallet made of rushes neatly plaited of small strips skinned from their outside after they had been for some time exposed to the heat of the fire; which being thrown on her back, the string passing under one arm and across her breast, held the soft rug in a fanciful position of considerable elegance; and she knew well how to show to advantage her queen-like figure when she walked with her polished yam stick held in one of her small hands and her little feet appearing below the edge of the rug. Thus she left her father and mother to follow the *cooly* chosen for her by her parents and relations.

All who saw her said, "there is not one left in the camp like her," but this they only whispered, for the bad temper of the bridegroom was too well known for them to dare to express the fears they felt, that their favourite would not be happy with such a sullen fellow; nor did their forebodings prove false. In a little time jealousy took possession of the bad man's heart, and he said that his *lubra* was cold to him and that she loved another. Then he said he saw a man near his camp, and when she replied he did not speak to her. Her *cooly* beat her and talked of killing her. A young sister had attended her, and to this girl she told her griefs and her fears, but the abuse and beating were repeated till fear gave place to anger, and the two sisters determined to return to their parents, and watched for an opportunity to get away unseen. This they found soon, for a number of the *cooly's* friends came to see him, and he ordered the girls to gather yams whilst he searched for opossums, that they might make a feast for his friends. Accordingly the girls took their wallets and their yam sticks and hurried out into the bush, but once out of sight of the camp they turned towards their father's home, and ran until fatigue forced them to stop. As they still feared pursuit, they climbed into a large tree, the trunk of which was hollow in the upper part, but before they had

time to hide themselves the *cooly* and his friends came to the foot of the tree and commanded them to come down. They knew their probable doom too well to comply, and the men lighted a large fire all round the tree in order to force them to leave their place of shelter. They had, however, by this time, hidden themselves in the hollow, where the heat and smoke could not reach them, and there they lay trembling. Finding that the fire had no effect in bringing them down, it was determined that one of the men should climb up and drag them from the hole and throw them down. The girls heard this decision and said, looking earnestly at the branches of the tree in which they were, "Break, O branches, break as soon as a man takes hold of you." The branches heard, and the first who took hold to climb by these pitying branches fell into his own trap and was burned in the fire he had himself lighted. Another and another attempted to climb and met with the same fate, till only one remained, but this was the dreaded *cooly*. He called to his *lubra* to come down, but she answered that she had left him and was going back to her father. For a long time she hoped he would weary and leave his watch, but he remained at the foot of the tree: warned by the fate of his friends he did not attempt to climb it. Becoming faint from fatigue and hunger the courage of the poor *lubra* failed, or rather seemed to yield, and she looked out from the hollow and told her *cooly* to go off a little way and make a camp for her and she would come down. He moved from his watch and began to gather the branches necessary for making a *my-my*, turning at every step to look if his prisoner was escaping. He saw her creep out of the hole, but then she hesitated and remained still, but she again spoke to the branches. This time she told them with words of power to put on her shape; like her, to have long curled hair, like her to have bright black eyes like two stars, to put red clay on the cheeks, and the opossum rug on the shoulders, to seem like her, waiting until the *my-my* was finished that she might descend to return to her *cooly*. But she and her sister silently descended on the side furthest from where the *cooly* was, and fled towards her father's camp. Her *cooly*, still thinking that he saw the girl on the tree, called to her to come down. First he spoke kindly, promising to forget all that was past, then he threatened and stamped with rage—all in vain. At last he feared his *lubra* had died in the old tree, he crept near, and saw that what he had supposed to be a woman was only the branch of a tree. He knew his mistake had been taken advantage of and he eagerly searched for traces of the fugitives. His eye was too well practised to miss the marks of the footsteps of his girls, and he followed them quickly and unerringly and reached the camp nearly at the same time as those he followed. He saw them clasped to their mother's breast and heard their father's warm welcome and the delighted shouts of their young brothers and sisters, and he hastened to claim his *lubra* before she should have time to tell of his cruelty. To his surprise she agreed at once to return with him, only asking that she might stay till next day, as she longed to be with her family for a little time. This he could not refuse. He watched her closely, but he had no power over her young sister, and in the night she told of all the insults, the beating and the attempt to murder

them, and warned her father, her brothers, cousins and friends, to be ready at a call to revenge her sister's wrongs. Morning came, and the *cooly* went to make a *my-my* at a short distance. He took his *lubra* with him, and she moodily seated herself beside him as if to watch his work. She took care to place herself so that she could communicate by signs with her own friends, and as soon as she thus told them that the *cooly* was off his guard they stole silently, and hidden by the bushes, nearer and nearer until just as he stooped to fix a branch in the ground the father threw a spear which pierced him in the back. *Licangwells* and spears showered about him, but the hand of his *lubra* ended his life. Snatching a spear from one of her brothers she plunged it into his heart, and thus won high praise and admiration for her courage and successful cunning. She returned to her father's camp more than ever the boast and pride of the whole tribe.

A Cannibal Story.

"Father, you must allow my brothers and myself to go and look after these people, there is another gone, we have not one left. No sooner do any of them go out to look for meat for the camp than we lose them, none of them return. This is the last, and the women declare that they do not know where they are gone. Indeed it cannot be that they are wearied of serving you, my dear father, and have willingly left you, for if that were the case their *lubras* would have gone with them. I fear there is something wrong. Let us go, and in three months we shall come back to my mother and you. I am very sorry to leave you, but you are strong and can catch plenty of opossums and flying squirrels and the bandicoots that my mother is so fond of. My sisters also will do all they can for you, so I am not afraid of your wanting." Thus spoke the son of Burrburram, a great and powerful old man in his camp. He was ready to hunt or fish or to form spears from the straight trunk of the blue gum, which for this purpose they cut with patient care with their stone hatchets, and then split into thin strips, which are hardened by the help of fire and polished. To prepare the soft-furred skins of the opossum for rugs, or to smooth the hard flint into heads for these finely-polished spears. To build the earthen hut, or *my-my*, to form cups and pails from the excrescences which grow on the red gum in which to carry water and from which to drink the simple mixtures of gum and the sweet honey from the honeysuckle tree—these and many other services had been performed by Burrburram's attendants with pleased zeal. But now they were all gone and the camp that used to be the scene of mirth was now silent, or only lamentation was heard for those who were so strangely absent.

For some time the father would not consent to the proposal of his son, he feared that he also and his brother would go, to return no more.

The affectionate old man, trusting that his beloved sons would be able to overcome all who might attempt to injure them, at last reluctantly consented

that they should leave him to search for his servants, each one of whom he felt for as a friend as well as a dependant.

Burrburram gave the young men much advice and many directions, and after two days spent in preparing a large bunch of spears, a stone tomahawk, an opossum rug each, etc., etc., they set out on their mysterious search. They walked across the mountain now called Mount William. About the second day they saw a wide plain stretching below them. To this they descended and continued their journey over it until they thought there must be no end to it. Day after day they walked on, now through thick bush, now over stony places, on which were hollows round and basin-like, from which had at some former period been thrown the stones that now covered the plain. These hollows were generally filled with pure water and afforded drink to the wanderers. At last, near one of the largest and deepest of these pools, they saw what appeared to be a *my-my*, but it was so large they thought it must be a natural mound. Towards it, however, they directed their course, and after a little time saw a man walking towards them. He seemed very old but was big and strong looking, with a strangely wicked fierce countenance. He carried a large log on his back, and as soon as he came near he threw this on the ground and called to the young men to come and help him. He had got a fine Bandicoot in the log, and his hand was so large he could not put it into the hole he showed them, to pull out the animal. "Make haste, and pull it out," said he, again, in his most persuasive manner, "and we will go to my camp there and have it roasted; make haste, I am very hungry, and I know it is a fine fat one": and he eyed the young men with a strange, eager, malignant glance. They gazed at him intensely, and then the elder said to him, "I know that you are a murderer, put your own hand in." He replied, "I cannot, it will not go in, or I would not have waited for you. Oh, put your hand in and let me get my supper, I have not had a roast for a week and I am very hungry." But his wicked expression growing every moment fiercer convinced the brothers that he had some plan of injuring them. They answered, "It is you who have killed our dear friends, you old wretch, and you shall put in your own hand; put it in instantly or this spear shall save you from all future murder." "I cannot, I cannot," he rejoined. "Well, if you cannot," said they, "put in this stick, and drive out the Bandicoot." "I will do so," he answered, "since you are determined," and the old man put in the little piece of stick and out came a snake. Unlike our snakes now, at each end it had a head, and with each mouth it hissed. But one of the young men, strong and good, fixed his eyes upon it and said, "You wretched assistant of this wicked murderer, you shall never have so much power again. You shall have only one head, and one little stroke shall be enough to kill you." One of its heads instantly changed, and the snake appeared as we now see them; but it seemed to feel shame at its altered form, and harmlessly glided away into the long grass. The old man lost all courage when he saw what a powerful foe he had provoked, yet he tried all his cunning. "I have two beautiful young

girls in the *my-my*, come with me and be my friends, I will treat you well and make you happy." But they spurned his deceitful offer and put an end to his wicked life. They then went to the large hut they had seen, where they found young and beautiful girls, who eagerly thanked them for killing their persecutor, and led them into a room larger than any one they had ever seen or heard of, and there they saw heaps of human bones piled up at the sides and corners as if thrown there after being picked bare, and many heads of the poor people who had been roasted and eaten by the old man.

They strove to find out from the girls whether any of their father's missing servants had been brought to the *my-my*, but the girls said they did not know, they were too frightened to look at them, they could not tell. Therefore the young men left the girls to go back to the parents from whom they had been taken, and again set out on their weary way. At last they rejoiced to see the sun shining upon a large lake surrounded by tall trees and bushes. But on one side they saw a high thick tree, under its shade they longed to rest and to slake their thirst from the bright water. Towards it they went, and when they came near it they heard a soft and inviting voice telling them to come up into the tree, that it was cool and pleasant, and that there was a soft bed of rushes to rest upon after their walk. They looked, and saw a woman lying on the tree, handsome and pleasing, though rather too fat. They looked on the water of the lake, which was deep up to the foot of the tree, and felt almost stifled by the dreadful smell of decayed animal remains. There they beheld many bodies of men who had been drowned in the lake. For a moment they stood in horror, then the youngest brother prepared to mount the tree. The elder one besought him to allow him to go up, or else to leave this female murderer and come away home; but all their missing servants lay amongst the drowned, and revenge must be taken for their murder. So he climbed the tree, his young face hardening with rage, and his rich black curls looking so beautiful that even the wicked woman wished she could think of saving him. When he got up, just as he was placing his foot on the highest branch, the woman, who till now had lain looking as kind and still as she could, raised one foot, and with a rapid motion attempted to throw him down. But he had carefully watched her, and leant so as to let her foot pass over his body without touching him, at the same time seizing her before she was aware of his intention, he threw her into the lake, where she perished among the festering bodies of those she had slain. He then descended, and they sadly turned their steps homewards, so depressed and overcome by the scenes they had witnessed, and by the death of their beloved friends (some young like themselves, and the play-fellows of their boyhood, and some old men who had assisted their father in teaching them all they knew), that they walked on the whole of the rest of that day and stretched themselves at night below a tree, without remembering that they had neither eaten nor tasted water since the morning of the day before. Next morning they pursued their way: they caught a flying squirrel but they could not find any water.

At the end of the third day, they came to the foot of a hill, and there they saw a beautiful spring gushing out of the rock. Of this they drank eagerly, and then looking up they gladly saw their own beloved Mount William. Strengthened by the hope of soon reaching home, they climbed the hill, but how should they make known the dreadful tale they had to tell? It must be done, and as they gained sight of the smoke from their father's camp, they hastened to get over the fearful task. But how can any one tell the grief or describe the heart-rending cries that followed? For many days and nights the whole camp was filled with the howlings of despair, and all faces were covered over with white clay, to show the depth of their sorrow.

Once Mount Shadwell was a very large hill, nearly twice as large as it is now, but there was a man—no, not quite a man, but like one, only he had more power. He went to Mount Shadwell and said: "I want you to be two hills, you must divide yourself." But no attention was paid to his command, though he waited a long time. So he said, "Do be divided, do, do become two hills," with many more entreating words. Still no answer, and he stood thinking how he was to obtain his wish when he heard a low bellowing noise like the lowing of a great many cattle at a great distance. Then he knew the hill had heard him. The sound became louder and louder, and there was a slight trembling of the ground, but the man was not afraid, he only rejoiced. The sound became dreadful, and a great heat arose from the bosom of the solid hill; its rocks and mounds shook and moved about, and then it separated into two unequal parts.

"This way, follow me," cried the man, and he hastened on, the smallest division of the hill moving after him, over stones, trees, morasses, all that lay in their way. The man, and the hill following him, hurried along, but a plant of the prickly acacia stood before him, and in passing over it, one of its prickles stuck in the man's foot.

"Stop, do stop, until I have taken this thorn out of my foot," said the man, and the hill did stand still, but when the man rose up after taking out the thorn the hill would not again move forward, and he found that it had fallen so as to turn the flat side on which it had formerly rested uppermost. This is why Mount Shadwell has that large hollow in the midst of it, and how the flat-topped hill came to be where it is and what it is. But this is not all, for Mount Shadwell was very angry at being disturbed and at having part of its body taken away from it in this manner. So it growled and sent out fire from its heart and then threw a great many hot burning stones after the man, intending to kill him, but none of them did him any harm, though they covered the country to a great distance from the hill, burned all the grass, and threw down many trees. The grass has grown up long since, for all this happened a great many years ago, and now trees have grown up too, but you may see plenty of the stones lying about yet, and white people call them stony rises. The old people say that

some time Mount Shadwell will get angry again and will kill everything around it with hot stones and shaking of the ground.

"Come, sister, I am going to bathe, look how bright the water is, and there is no person near this pool, so we may amuse ourselves in the water as long as we like." So spoke Gunawarragood (or the good swimmer) to her sister Gloverage (or the highest, lightest, flier). They were both young and beautiful, and had not as yet become the *lubras* of any one. Indeed, they felt only fear towards the young men who attempted to win their love. This might not have freed them from even worse than importunity had it not been that these two young women, though quite like the other girls of the tribe in most respects, had on their shoulders long and strong wings, with which they flew away far into the bush and hid themselves from all. Even their parents could not find them, for had they been able to get them into their power they would have forced them to become the wives of some of those who wished to have them. The water, warmed by the sun, and at the same time shaded by the thick trees that grew on the river banks, soon parted to the round, plump forms of the merry girls, and as they chased each other across its surface or dived into its bosom, their loud laugh rang far into the surrounding woods and attracted the attention of Unahanach (or he who excelled all in killing the emu, etc., etc.), who had been forming a camp on a beautiful bank at no great distance. He guessed whose voices he heard, and knew that even a suspicion of his being near would cause the flight of those men-haters. He therefore crept softly towards the river, and having gathered some small stones he climbed into a tree which enabled him to look down over the pool, and when thus ensconced he threw one of the stones so as to let it fall just beside Gunawarragood. "There is a fish, sister, come we will catch it," she said, but as they sprung forward to make the attempt, another and another stone fell and yet nothing could be seen. They thought themselves far from human beings, no bird was to be seen, neither could they discover eels or black fish. Unahanach played for some time with the girls, but at last showed himself carelessly sitting on the high tree without seeming to have any intention of approaching nearer. Though much startled at first, they, knowing their own power of rising up into the air, thought they might amuse themselves by looking at this intruder for a little while without danger. But he had much to alarm them with had they known his power. Young and with the most active figure, yet of a strength that defied the strongest emu, and even enabled him to resist the efforts of an old man kangaroo, he had no equal in the chase, and conscious power gave a dignity to his expression that at one glance calmed the fears of the two girls. His large brilliant eyes, shaded by a deep fringe of soft black eyelashes, gazed down upon them admiringly, and his rich black hair hung round his well-formed head, smooth and shining from the emu oil with which it was abundantly covered. Unahanach saluted the girls, and called to them to come

out on the bank and speak to him. A little persuasion succeeded in causing them to listen, each moment lessened their dread, and admiration of the stranger so quickly succeeded fear that they seemed all at once to have forgotten their life-long hatred of men, and to yield to the witchcraft young eyes possess over their fellows.

"What will you call me, lovely ones," said he to both, for their charms were so equal he could not choose one before the other.

"I will call you father," said Gloverage.

"That will not do, what will you call me?" turning to Gunawarragood.

She replied, "I will call you uncle."

"No, something kinder."

"Brother, cousin, nephew, friend."

Each name of friendly endearment was tried alternately but none of them were accepted, none of them fulfilled the wish each moment made stronger. Yet knowing how often the most eager lovers had been rejected, the youth dare not venture to pronounce the name he aspired to. At last one murmured "husband," and then he knew he had conquered, and springing from the tree he called with a joyful voice "Yes, yes, I shall be your husband, come to my camp, all is ready," and he led them on to where he had the most beautiful camp ever made. The sides and roof were formed of bones taken from the emu and kangaroo, and covered with the skins carefully taken off and dried by stretching them on the smooth trunk of a large gum tree, and fastening them there with small pegs of wood. The finest parts of the flesh of the emu and kangaroo had also been carefully dried and hung ready for use, along with large pieces of emu fat, which is so highly valued for many purposes. And when he took out a large soft rug of emu skin for each of the girls, and threw them on their shoulders over the dreaded wings, there did not remain one thought of flight in their hearts.

MARCH 29TH, 1898.

F. W. RUDLER, Esq., F.G.S., *President*, in the Chair.

The Minutes of the last Meeting were read and signed.

The election of ROBERT CODRINGTON, Esq., F.R.G.S., as a Fellow of the Institute, was announced.

The PRESIDENT introduced Captain GUY BURROWS, who proceeded to read his paper on "The Natives of the Upper Welle District of the Belgian Congo," and to explain the large collection of native implements, ornaments, arms, etc., which he had brought home with him from the Congo.

The paper was discussed by Mr. A. L. LEWIS, Mr. C. H. READ, Mr. H. BALFOUR, Dr. GARSON, Mr. F. MARRIOTT, Dr. FELKIN, and others; and a hearty vote of thanks was accorded to the author.

ON THE NATIVES OF THE UPPER WELLE DISTRICT OF THE BELGIAN CONGO.

By Captain Guy Burrows, Congo Free State.

[with plate ii.]

It is necessary, I think, in a paper of this kind, to give some general idea of the country I shall have occasion to refer to, before I pass on to the subject of my lecture, which is primarily the people who live there. As you will all recognise, the influences and conditions of a country play a large part in the development and evolution of its peoples; whose several characters, customs, temperaments, and appearance are due in a large degree to the environment of their dwellings and the situation of their territory. I need hardly say that when I have given a brief outline of the geographical and climatic conditions of the country, I shall speak directly of the people themselves, as it would take too long to make the briefest attempt at connecting the two subjects. Members must therefore perform this service for themselves, bearing in mind these geographical conditions and applying them, where necessary, to the life-conditions of the native peoples.

I must begin by defining the district itself—called the District of the Upper Welle. Roughly it extends from 23° in the west, running eastward to the Nile, the most northerly point of the Congo State, its northern boundary being the River M'bomu and the continuation 5° north. The southern boundary cannot be defined as an actual line, but is roughly $2\frac{1}{2}$° degrees north. It is the watershed between the Rivers Aruwimi and Welle.

The altitude of the country in the east is 2,500 feet above sea-level, sloping down across thickly wooded plains to 1,400 feet in the western portion at Djabbir. The climate is fairly good, being warm in the day and always cold at night. There are two rainy seasons: the first begins about the middle of July, lasting till the middle of November. It does not rain continuously with the incessant downpour usually experienced, but it rains at least during the half of every day and probably in the night as well. The second, or smaller rainy season, lasts from about the February 15th to March 15th. During the other months of the year the thermometer rarely goes above 92° Fahrenheit. One drawback to the climate however, is the prevalence of malaria, owing to the quantity of water that lies stagnant in the low lying country among the rivers.

The district is watered by the River Welle, together with the tributaries Bomokandi, M'bima, Uerre and their lesser affluents. To the north of the Welle, in its western portion, the country is covered to a great extent with thick forest

the central and easterly portions consist of large open grass plains, interrupted with alternate undulating rocky ground, sparsely covered with scrub bush.

South of the river the country presents quite a different aspect, being dotted over with numerous villages surrounded by large and thriving plantations. On the northern bank of the river the land is almost worthless; but south of this the soil is highly adapted to agriculture—so much so that the natives are obliged to work only two months in every twelve. I think this will give a rough general idea of the conditions of the country, and I will now pass on to the people who dwell there.

Great interest, I am sure, will be taken in the people I am now about to speak of, and I can only regret that my data do not permit me to give a very precise account of them—for the reason that I was obliged to wander a great deal in my district during the period of my observations, and I am sorry to say that the accurate memoranda I took were lost on one of these camp-shifting expeditions. The people I am referring to are known generally as the pygmies, and in default of my more exact notes I must give you the broader details that I am able to distil from an over-burdened memory. If my disquisitions on this subject are of such a nature as to call up grave doubts or questions of accuracy, I must refer you to my notes, which you will find somewhere in the heart of a Welle forest.

Firstly, the name these people go by among my own familiar Zande natives is Tiki-tiki, the Mangbettou calling them Akka, by which name they call themselves, as far as I am able to remember. Further south I have heard them spoken of as the Wombuttu, but it is practically the same race, while the Cape bushmen are said to be closely allied to them. I cannot say myself whether this is so or not, but I have it on the authority of Major von Wissmann that they are both part of the same family, and that the difference between them can be amply accounted for on a momentary consideration of environment and climate and its influence upon the people from an anthropological point of view. I should say that his theory is highly probable, and it is interesting in its bearing upon the present subject. But I must keep all my time for the practical and reserve the theoretical for the good hands into which it is likely to fall.

The pygmies are chiefly to be met with split up among the Mabode and Maigo tribes, and are frequently encountered among the Momvons: roughly speaking their zone may be described as being between two and three degrees north of the equator. Even this branch of the dwarf race in general has a sub-division, there existing in about equal numbers two distinct kinds, the black and the red pygmies.

The black pygmies are two or three inches taller than the red, but obviously an inferior race. They are not so well formed or so intelligent looking as the little red-men. In saying this, I use the word intelligent-*looking*, because I do not wish to imply that they are less intelligent, but merely to state that their facial expression does not give the same outward indication of inward brightness. These two distinct tribes do not live together or apparently assimilate in any way, each kind marrying

in their own people only, and each sept being either all black or all red. The pygmies have a distinctive tribe mark, by which they may be recognized everywhere; but unlike other tribes the mark is a natural one, and is seen in the fact that the upper lip is abnormally heavy and protruding, or as is generally said, overhanging.

But though the isolation between the two tribes is complete, there is very little difference in their customs, rites, mode of living, and occupation. I do not think therefore that I need regard them as distinct tribes, but will speak generally of the pygmies, particularising when anything occurs to me as not common to both sub-species.

The point about their mode of living is that they are thoroughly nomadic, and are seldom to be found in the same spot for any great length of time. They show no particular affection for certain places, nor can it be said that they connect the emotions of the mind with external surroundings. It is therefore readily to be understood that the affections are almost an unknown quantity among them. They have apparently no ties of family affection, such as mother to daughter, sister to brother; while anything further removed than this is not recognized at all in the light of relationship. They are very exclusive, however, holding themselves aloof from all intercourse with the people of other tribes. They are shy and cautious in the bush; but when taken prisoners they are fearless and defiant. Curiously enough, when they come as individuals to live as servants of a white man, they make no friends among others of their own tribe who may happen to be present in a like capacity; but they will become excellent friends of other natives, and, when away from their tribes, are very jealous of their own people.

The low state of their mental development is shown by the following facts: they have no regard for time nor have they any records of the past, traditional or otherwise. No religion, so far as I was able to discover, has ever been in use among them; they do not know the totem and have no fetich rites whatever. They live simply in the present and for the present. What has happened is speedily forgotten, and they do not seek to divine the future by occult means.

Physically they are a fine race, if we set aside the accepted smallness in stature. They are strong, sinewy, and muscular, fearless and daring; their bodies are well-proportioned, and they are, as we should say, "well set up," which gives them the appearance of sturdiness. But they are not cleanly in their habits as are the other tribes, and have an intense dislike to water. They are mostly unable to swim—probably as a people they know nothing about the art at all, though commonly living near water. They are great eaters, and find no difficulty in getting through twice the quantity of food that would suffice a full-grown man.

Their villages hardly deserve the name, consisting of small bee-hive huts of wicker and mud, in groups of about thirty or more. These huts are about 4 feet high, and are entered by a small opening about a foot and half high, allowing just room enough to creep through. Their beds are curious, and reminded me of the foundations of a lake dwelling on a small scale. Sticks are driven into the

ground at four corners, with other sticks placed across, the whole being raised a few inches above the floor of the huts.

Like the other tribes each village is ruled by a chief or head man, but among the people there is no variation of rank. Every man fights under his own chief and for his own clan without regard for the other side. They never fight for the mere pleasure and love of fighting, but only when called upon to do so by their chief or by obvious necessity. In attacking strangers who may be passing through the bush in their vicinity they hide themselves and carry on the fight from their hiding place, so that nothing is to be seen of them except their arrows—and they are remarkable marksmen. In the open, however, they are exceedingly plucky.

Nominally they live under the protection of the chief of some other tribe—chiefly the Mabode. Owning no territory they settle on the land of a chief, a tacit bargain being usual that they shall remain there unmolested on condition that they give their military assistance to him when he may be engaged in warfare. Then they build one of their villages, where they stay as long as it pleases them, or until they are offended by the chief for whom they have undertaken to fight. This is not often, the pygmies being generally held in fear and respect because of their prowess in war, and because they are known never to forget an injury until it is wiped out to the utmost by adequate vengeance. Besides their assistance is valuable in the event of an inter-tribal quarrel, in which case, as I have explained, the nominal protector receives aid from his pygmies. As all these peoples are in a perpetual state of internecine warfare, the aid of the pygmies is no small factor in the army of the chief under whom they live, nor are they a negligeable factor in his domestic diplomacy.

A native chief is very fond of getting hold of a child of the pygmies—a boy—to train it up as one of his own bodyguard. By this means the chief is enabled to find out the state of mind of his little neighbours, for the boy may come and go among his tribe with a freedom denied to the other natives. In this manner the chief is able to anticipate the wants of his allies, or to receive news of their intended actions, which it is often very necessary for him to know.

The national weapon of the pygmies, as I have indicated, is a small bow and arrow, with which they are extremely skilful; I myself have seen among them marksmanship that seems almost incredible. They will shoot four arrows, one after the other, with such rapidity that the last will leave the bow before the first has reached its mark. When an arrow misses they fly into a rage at the disgrace and mortification of the occurrence, often smashing their remaining arrows and throwing away the bow. Some travellers, I notice, say that the pygmies poison their arrows; but I think I may give it as a matter of fact that this is incorrect, and a gross libel on the pygmies. I have also heard it said that they have not got beyond the practice of tipping their arrows with flint. This, too, I need hardly say, is also a matter of fiction. During the whole of the long period I spent among them I never saw a single instance of the flint being used.

They carry the small light spear, but rather in imitation of other tribes, for it

is by no means a favourite weapon among them, and they are not very skilful in using it. They carry no shield whatever.

How do they live? Without territory of their own, without family ties, with no arts, one may well ask such a question about them. Their sole occupation is hunting, at which they are great adepts. Extremely skilful as trappers, they manage to keep a good supply of animal food, and are very eager hunters and fishermen. They kill even elephants with their little bows and arrows, their methods being first to blind the animal by shooting into his eyes, and then to weary him out by incessant attacks till they are able to despatch him. As fishermen I have seen them perform remarkable feats. With a small piece of meat tied to a string, and entirely without the aid of a hook they will often succeed in landing quite heavy fish where a less skilled angler will fail with the most superior tackle.

But however good a supply of animal food they are able to obtain, it is obvious that they require vegetable food as well. As a rule the pygmies settle near a village of some big chief, where they are sure to find extensive banana plantations. Though the pygmies grow no food stuffs whatever on their own account, they are very fond of the long unripe banana. Mr. Pygmy's method of obtaining this delicacy is simple, if original. On his return from a day's hunting, small pieces of meat are carefully wrapped up in grass or leaves and the pygmy betakes himself to the nearest banana plantation. There he selects the bunches of bananas he requires, shins up the trees and cuts them down, affixing one of the small packets of meat to the tree-trunk with a little wooden skewer—by way of payment. In this manner he satisfies his conscience, and declares that he has not stolen the bananas, but only bought them. He becomes very angry at the merest suggestion of theft. This custom is recognized universally by the tribes among whom he lives: even to the extent that the pygmy will select a bunch of bananas long before he requires it, intimating his desire by shooting an arrow into the stalk. The owner seldom risks the removal of such arrows.

They have no other idea of trade, and their only object in hunting is that they may obtain food. When they kill an elephant they consume the meat but consider the tusks valueless and do not even trouble to bring them away. They never work and never barter, except in the form of food. They purchase their implements, such as spears, arrow-heads and knives, from their neighbours, in exchange for dried meat, or for captives they have taken in the bush. They dispense entirely with cooking utensils, all their food being roasted or smoked. It has been said that the pygmies are cannibals, a statement I will here take an opportunity of refuting. As a rule you cannot buy smoked meat in Central Africa in the open market, never being sure that it is not human flesh. But among the pygmies cannibalism is regarded as a most reprehensible practice, and is looked on with scorn.

Of music and of musical instruments I have found no knowledge among them; nor have they any idea of the dance as it is understood among other tribes.

But once when I was camped for the night among pygmies, I got them to show me their idea of dancing, after a great deal of persuasion. Several of them, men only, stood round in a circle, each with his bow and arrow; then one began to beat the arrow against the bow, another joined in and another, till they were all beating in rhythm, to mark the time. Then at a given signal they began to march round in a circle, the legs quite stiff and the body held perfectly erect, which they continued to do until they had *danced* enough. During the whole time their faces were a pattern of solemnity, not the vestige of a smile being traceable on any of the faces. The effect was one of most ludicrous melancholy, if I may employ what seems a contradiction in terms.

I witnessed few other customs among the pygmies. They have no rites of marriage or burial. A man dies and is buried where he falls—in a sitting posture, as is usual in all these parts. *There* is an end of him and his memory. His tribe wear no mourning, erect no monument to him, and do not reverence him in any way.

Their dress is very simple. The men wear a plain strip of cloth, the women simply a bunch of leaves. They wear no ornaments of any kind; but under white influence—that is to say, as servants in a station—they are fond of decking themselves out in the old clothes of their masters, no matter what the size may be. I have seen my pygmy strut about the station in a hat several sizes too large for him, and reaching down over his eyes; at other times I have seen him augment his scanty costume by a neck tie, or one cuff—in the most serious manner in the world, and utterly unconscious that his appearance is in the least degree ridiculous.

With their primitive appliances they have great difficulty in obtaining fire, so they keep one going perpetually. They set light to some large tree which they keep smouldering for months at a time.

The inhabitants of the Upper Welle district may be regarded as forming five distinct tribes whose origin and descent are entirely lost in the mists of unrecorded past. Each tribe keeps aloof from the others, holding tenaciously to its own rites and customs, and living on terms of intermittent war and peace with its neighbours. In appearance, dress, weapons, and language there is considerable diversity, and, while they all hold the same rough and ready ideas of justice, their mode of administering it is in every case peculiar. Split up among these five tribes are the pygmies, and several smaller tribes or septs, whom I will mention separately.

Of these tribes, the most important, as well in point of interest as of superiority, is the Azande, a warrior race, traditionally said to have come from somewhere to the northward, though their origin is as obscure as that of their neighbours. This tribe, known also by the title of Niam-Niam, has its location on the north bank of the River Welle, covering a large tract of land that stretches from end to end of the province. Attracted by the more fertile lands across the river, where the soil better repays tillage than the ferruginous clay of their own territory, they are pushing their way gradually southward towards the north bank

of the River Congo; indeed, had not the white man been present to check their advance, it is reasonable to suppose that by this time they would have completely absorbed the remnants of the various other tribes established south of the Welle. They are not a nomadic people, this pushing tendency being an almost imperceptible southward movement. Entirely without anything approaching to a substitute for the art of writing, they have no annals or records of their predecessors, of whom, beyond a mere genealogy of the last six or seven generations of the ruling chief's family, they have absolutely no knowledge. Nothing tangible marks the passage of their possible migration from the north; nor in the traditions of other tribes does there seem to be anything that could possibly throw light upon this vague assertion.

Essentially a warlike race, the Azande deliver themselves in time of peace to hunting, taking little trouble about their dwellings or plantations. Their huts are usually circular in form, with conical thatched roof, often so low pitched that an upright position in them is impossible. This, however, is not considered necessary, the top of the hut as a rule being filled with smoke from the fire, the inmates naturally prefer to squat on the ground. Their huts are not grouped together, as is otherwise customary with the tribes of the district, the Azande villages being constructed on a plan entirely unique. At a point in a path that winds its way through the denseness of the bush may be constructed perhaps two or three huts close together; then higher up, and most probably round the corner of a bend in the track, they will build two or three more. Still further away will be found the centre of the village, comprising as many as six huts, one of which will probably form the chief's residence. The same plan will be observed on the other side of this village, the huts standing scattered in a like manner. The object of these huts being severed from the main part of the village is purely strategic. They form the outposts to the chief's party, for the purpose of preventing a surprise attack by a hostile force. On the approach of an enemy the occupants of the first huts quickly make off through the bush and notify the danger to those in the main village, whence all are at once warned, and precautionary measures taken.

Unlike all other tribes in the district, the Azande neither buy nor sell their wives, although they are polygamists in the highest degree, there being practically no limit to the number of women who may be owned as wives by the chief. They are extremely jealous of their womenfolk, whom they do not permit to live in the same village as themselves. The women's village is generally in the bush, about 200 yards or so distant from that of the chief. Women are never seen in an Azande village, the pathway to their own being kept secret from all outsiders. This system, while being something like that observed by the Arabs, has the important distinction that the women are not shut up. They are free to come and go, and do what they like except visit the men's village. In common with the entire native population of Central Africa, the custom among the Zande is that the men do no work that is not connected with the chase or the manufacture of implements. All agriculture is carried on by the women.

The type of faces met with among the Zande is not that of the negro at all, his features pointing to a descent quite different to that of his neighbours. In the Azande face, one may look in vain for the thick lips, the short snub nose, the receding chin and backward sloping forehead that are the distinguishing marks of the African negro. Even from a European point of view, some of them—both men and women—would pass as being very good-looking. Their skin is clear, and lightish brown in colour; the eyes are large and the lips not very thick. Some of the faces met with among the tribe are quite semitic in appearance, differing only in colour from that of the Jews in Europe. Some of the women are fairly good looking. The race as a whole is well-knit, healthy, and extremely independent, regarding all other tribes as their inferiors. The hair, though naturally curly, differs from the wool of the negro; the Azande women wear the hair long, working it into shapes, more or less fantastic, on the top of the head.

The Azande are very clannish. Although divided into two parts, ruled on the one hand by the descendants of N'Guru, and on the other by those of Bangòra, a Zande is a Zande wherever he may go. No matter where he happens to turn up, he is always welcomed by his own tribe. His being a Zande franks him, as it were, being a sort of masonic badge among his own people.

The chiefs of this tribe have a much greater power than that usually invested by the Central African natives in their chiefs, who oftener than not are chiefs only in name, and bear an empty title that carries with it very few rights. The Azande chief is an important functionary both in time of peace and in the conduct of warfare. His rule is absolute almost to despotism; life and death are in his hands, nor does he neglect the exercise of these prerogatives.

The Azande are a shy and suspicious race. Although you may send word to a chief to apprise him of an intended visit, you may be quite sure of not finding him at home. Arriving at his village, you will find it deserted, although you will be met by one of his sons, and more than enough food placed at the disposal of yourself and your men. Any inquiry made concerning the chief's whereabouts will be met with the reply that he has been obliged to go to some place about a day's journey distant. His return, you are told, cannot possibly take place until the following day. For the rest of the time you are waiting for him, his messengers will continue to arrive about every two hours, with the report that their chief is on his way and will return to-morrow. In reality he is some two hundred yards away with his wives in the women's village.

Their arts are limited, though in advance of most of their neighbours. From the Arabs they learnt how to weave a sort of rough cloth, white and of very coarse texture, but which wears very well. As stated previously, it is the women who work, but to this otherwise general rule one exception must be made—the armourers or blacksmiths being invariably of the male sex. Their occupation is for the most part hereditary. They do no work on their own account, but make the arms—lances and shields—for the use of the whole tribe. Weapons as a rule

do not belong to the individuals who carry them, but are the property of the chief, who doles them out as occasion may require.

In warfare the Azande are in advance of the other tribes, possessing a considerable knowledge of military tactics. Like the Zulus, they charge, not in a mob, but in crescent or column form, according to the nature of the ground, of which they know how to take advantage. Their courage is admirable, their contempt for death supreme. They will stand to a fire that is dropping them by dozens, charging time after time until absolutely compelled to retire. Coming upon seven or eight men armed with rifles, they throw away their own arms and rush their opponents, though they may lose twenty or thirty men in the attempt. They are quite prepared to lose them, knowing that ultimately the guns will be theirs.

One of their methods of trial is the ordeal by poison. The accused, being brought before the chief, is ordered to drink a cup of some virulent poison, the ingredients of which are jealously kept secret. He receives the cup and takes the draught. He stands still for a moment, all around watching eagerly what the effect on him will be. Not a word is spoken, absolute silence reigning over the proceedings. His hands begin to quiver—not from fear, but by reason of the action of the poison, which has a contracting effect upon the muscles. Gradually his sinews tighten; he becomes quite rigid, falling dead without a sound. He is considered innocent if the drug fail in its effect, or if he vomit it, but it has nearly always the same fatal result.

The termination of the ordeal is almost a foregone conclusion in every case, for it may well be assumed that a chief will not impose the ordeal by poison unless he is anxious to get rid of the person suspected.

The superstition of the Azande has called forth a curious and interesting method of attempting to prove the events of the future. This is known as the invocation of Benge. Their faith in this peculiar system of augury is implicit. They consult it on every occasion of doubt, trivial or important: "Benge cannot lie—I will consult Benge," they say. For purposes of illustration, let us suppose that the chief is anxious to know if a certain road, by which he wishes to travel on the morrow, is safe. For his purpose he selects two young fowls, and as Benge can only be invoked in quietude, he repairs with two assistants into the bush, where a small clearing is made. Here they sit down, the assistants opposite to one another hold the fowls by the legs, drawing down the pinion feathers into the hand so that the bird may be powerless to struggle. By means of a feather, an equal quantity of poison (a red composition, made by mixing water with the scraped bark of a certain root) is put into each chicken's throat. Then the man who is questioning the oracle makes an incantation somewhat to the following effect: "Benge, tell me true! If this fowl die and this one live, the road is safe." Then he addresses the fowls. "You die!" he exhorts the one. "You live!" he says to the other, and the result is watched with anxiety. Should the effect of the poison be different to that wished for he will postpone his project or take

another path. The Zande has no other religion; but in Benge he has absolute faith.

The Azande are cannibals in so far as they devour such as are slain in battle. They do not hunt men for food.

Although in some measure fond of personal adornment, they do not tattoo.

Such is the Zande in his native state. Brave, intrepid and unflinching, yet shy and suspicious; with a faith in augury almost amounting to fatalism, his qualities are of a higher order than those of the surrounding tribes whom in the natural order of the survival of the fittest he was absorbing on his way southward when checked by the advent of the civilising white man.

What now passes under the name of the Mang-bettou tribe may be considered as coming next in importance to the Azande. Some fifteen years ago the original Mang-bettou were the great people of the district to the south of the Welle. But the treachery of the Egyptian officers of Emin's troops, and the ever present attacks of the Azande—coupled with the pressure of the Abangba tribe in the North West, and of the Niapu people of the south—tended to disperse them, and their remnant assimilated with other tribes. But their customs, language, fashions, and arts remain, having merged into adoption among the present race of the Mang-bettou—the conquerors thus assuming the customs and language of the vanquished.

The Mang-bettou of to-day are a mixture of the Abangba, remnants of the various tribes that from time to time swept over that portion of the country, the Niapu, Abarambo, Mangbell, and Abisanga tribes. The few original families of the Mang-bettou that are left are split up among these tribes.

The villages of the Mang-bettou differ from those of the Azande, being in every respect superior, except from a tactical standpoint. In form they are sometimes rectangular, sometimes circular, occasionally some 200 yards in diameter. The huts are built next to one another at fairly regular intervals, the centre being kept quite clear and swept twice a day by the women of the village. The huts, either rectangular or circular in shape, are lofty and well built, with high walls and well thatched roofs, sloping or conical, as the case may be. Often the walls are ornamented on the outside by geometrical devices, such as the interlacing of the rhombus with the circle, drawn in black, white, and red, the only colours for which there is any name in the Mang-bettou vocabulary. The women reside in these villages as well as the men, and, unlike the Azande, are visible to strangers.

Among this tribe agriculture is well fostered by the women, enormous plantations usually surrounding the native villages. The men are very skilled in all manner of ivory work; wrought-iron is also a speciality among the men of this tribe, who are keenly sensible of the possibilities of the metal when brought under the influence of heat. Their mode of manufacturing cloth is curious and deserving of notice. The bark is stripped from a certain fig tree, known as the Urostigma, and placed on a smooth wooden block, where it is beaten out with ivory hammers. It is then buried in the mud on the bank of a stream, taken out again, and cleansed for use. The men wear it between the legs, fastening it round the waist by a rope

of grass or a belt of antelope or zebra hide. When the cloth is new it is extremely stiff, but after a little use becomes soft and pliable.

Unlike other races of the Welle, aristocracy of family is recognised among the Mang-bettou. Between the chief and the people are a race of freed men, who do not engage in manual labour of any kind. From the term freed men it must not be inferred that the people below them are slaves; they are equally free, but are without the hereditary rank of the so-called freed men, who are generally relations of the chief or in some way connected with him. Thus, a chief may receive an application for porters, and may have sixty or seventy men around him, not one of whom he can lend. "These men do not work," is his answer, implying that they would not so demean themselves. The distinction of caste is carried out in war; the so-called free men carry spear and shield, while the lower orders are armed with bow and arrow only.

The office of chief is not of necessity an hereditary one. Generally, it is true, the eldest son follows in direct succession to his father, or the chief may have named his successor in one of his sons renowned among the tribe for his prowess. His acceptance by the tribe, however, is a matter for the decision of the council, whose ultimate selection is final. Deficient in courage and wanting in their love of independence, this race is far more under the white man's sway than are the other tribes, the chief's power being therefore more limited.

The people are exceedingly abstemious, though occasionally their big chiefs are addicted to drinking. The presence of the white man, too, has served to check their practice of cannibalism, which is less prevalent among the Mang-bettou than among the other tribes. Nevertheless, at the core they are still man-eaters, and will indulge in their desire when they are not in fear of detection. Like the Azande they have no tattoo mark.

The Mang-bettou are not a musical race, their only instruments being the great war drum and the tusk trumpet, and neither being used for pleasure. The war-drum is an institution answering in a rude way to the national telegraph among civilised races. One of these instruments is generally to be found in every village. It consists of a piece of wood about 4 feet long, cut from the stem of a tree, and hollowed out from a long narrow hole in the top. It stands upon four wooden posts and has usually a figure head of some animal carved in wood. The operator beats it with short sticks on each side of the opening, the sound emitted carrying for miles. This beating is taken up from village to village; various codes of signals are understood, and it is thus a means of transmitting intelligence between the villages both for purposes of peace and for news of war.

The trumpet is made of ivory, being simply a tusk with a hole bored at the thin end. It is used for signalling in battle, to indicate positions, to notify danger in certain quarters or to transmit orders. The fighting is bush warfare; the warriors never charge nor have they any knowledge of strategy.

This tribe have also a mode for predicting the turn of events in the future by which they may shape their actions to advantage. In this case it is not performed

by the inquirer, but is given over to a professional, and is known as the Mapingo. A bamboo stem is peeled and balanced horizontally upon two upright pegs—not an easy feat in itself, considering the smoothness of the peeled stem. On this are placed thirty-nine heaps of short sticks, beautifully polished, each heap being composed of one stick resting between two. The seer begins to walk round them, talking to them and clapping his hands, until one of them slips away. By the movement of these little sticks he will predict upon the subject inquired into.

Morality is practically non-existent among the Mang-bettou, the reason being that the chiefs have so many wives (sometimes up to five hundred) that there are no women left for the young men of the village to marry.

South of the river Bomokandi dwell the Mege, who, like the Mang-bettou, have adopted the language and many of the customs of the conquered race. To them is due the credit of having been the original importers of the oil palm (*Palma elais*) which now grows throughout the country in large numbers. Beyond this they are not a very interesting people, differing only in slight details from the present race of the Mang-bettou. Essentially a bush race, they are armed with bows and arrows, the spear and shield forming no part of their armoury. They do not tattoo.

The Mege are ruled over by a Mang-bettou not of the present race, but of the old stock that ruled the now scattered tribe. To the south of the Mege are the Maigo tribe, but between these two there is very little difference.

The Mabode, whose location is also in the south of the Mege, are a great agricultural tribe. They live in large villages, surrounded by a stockade and a ditch, these villages sometimes containing as many as 300 to 400 huts, giving the village a population of 2,000 or 3,000 people. In fighting they act chiefly on the defensive, one of their methods being to build small houses in trees, whence they shoot down upon their enemies with poisoned arrows.

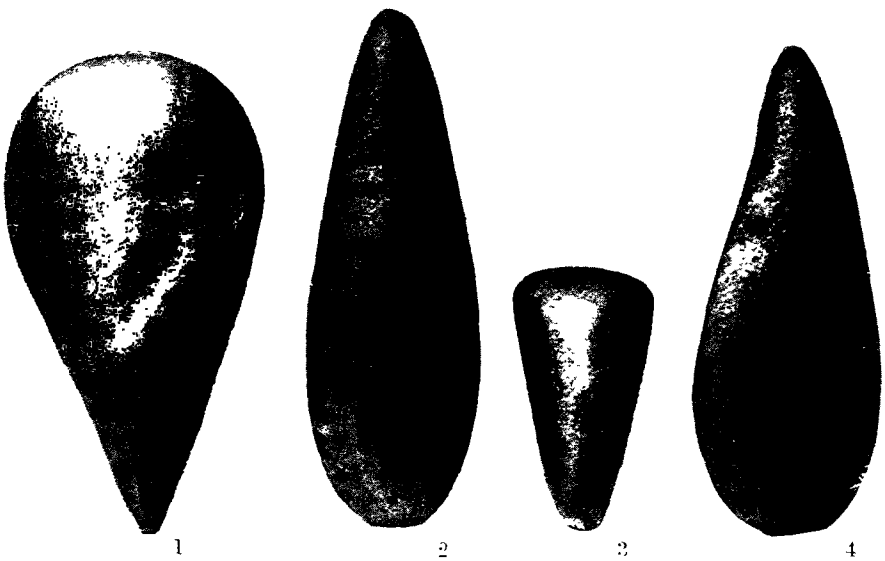
These people are great cannibals, the presence of the white man having had little restraining influence over them. Their laws forbid them to eat a blood relation, even though he may have been killed in war. This, however. does not prevent them from cutting up and cooking the corpse, and selling the meat thus prepared to another person for food.

These Mabode people tattoo themselves, not as we understand tattooing, but by the excision and removal of little triangular pieces of skin, the healed wound leaving an ineradicable scar. This is performed on both sexes both before and behind, quaint symmetrical devices being followed in pattern.

It is chiefly among the Mabode that the pygmies now live. The Mabode themselves are smaller in size than the other races around them, this being especially noticeable among the women, who are also darker in colour.

Explanation of Plate II.

Figs. 1-4.—*Four axe-heads of ground hæmatite*, from Mount Tina on the right bank of the Bomokandi River. They are dug up by the Mangbettu and Azande when cultivating the ground, and considered to have fallen from the sky. They are consequently used as charms, and are rubbed on the body in case of sickness.





AXE-HEADS AND ORACLES, CENTRAL AFRICA.

Figs. 5 and 6.—"*Oracles*" *of the Azande tribe.* In Fig. 5, the stick is turned round in the socket; in Fig. 6 the upper part is rubbed on the moistened surface of the lower. In each case the ease or difficulty of the movement is symbolical of the probable success or failure of an enterprise. The process is called consulting *Bengé*.

Discussion.

Mr. H. P. Fitz-Gerald Marriott, referring to what Captain Burrows had said about natives burying in their houses, said that in the Denkera district of the Gold Coast he had slept in a long room, in the ante-room of which his native servants would not sleep, preferring an exposed position across the yard; he found that this was owing to a man having died of small-pox, about three months before, in the very room he occupied, and having been buried in it about two or three feet below the surface; he, however, continued to sleep in the room for ten days. He asked whether the square houses amongst the Azande tribe were ever of two stories, or had the influence of Moorish decoration, that appears in the Ashanti Gold Coast districts inland in stucco-relief work and arches in the chiefs' houses, and whether whitewash or redwash was used. Also, in reference to masks exhibited, whether Captain Burrows had seen any traces of secret societies such as exist near the West Coast, which might have been evidenced by processions in costume, led by a bell-ringer or one carrying a hippopotamus hide whip, which are signs respectively of the Egbo and Kofong secret societies, the former in the lower Niger districts, the latter in the hinterland of Sierra Leone and in other varieties elsewhere on the West Point.

Captain Burrows said that the houses were built as a rule of grass and sticks, not mud; but that sometimes a chief's house would be of mud, and then might have a coating of white- or redwash; they were never of more than one floor. He had not seen signs of the secret societies such as exist on the West Coast.

Dr. R. W. Felkin said that he too had been much interested in Captain Guy Burrows' paper. He was surprised to hear that the name Aruwimi was unknown to the Captain, for although he was well aware of the numerous names given in Africa to different parts of a river, often causing errors to arise, yet Gessi, Lupton, Emin and Junker had all spoken with him about an Aruwimi river, and the name appears on Junker's map. With regard to the A-sande tribe, Dr. Felkin thought that they had probably migrated from the N.N.E., from the Galla or Somali district. There certainly was a stream of migration from the Red Sea Littoral towards the Gulf of Guinea, and when he was on the White Nile in 1879, he had personally noted the Madi tribe, which was then slowly wedging itself across the Nile to the south of Lado. Many of the burial and other customs noted by Captain Burrows led him to think that the natives did believe in a future life and a spirit world. He had seen the Tikki-tikki and had a number of their arrows, and did not believe that they ever used poison, thus agreeing with Captain Burrows and not with some other travellers.

APRIL 26TH, 1898.

F. W. RUDLER, Esq., F.G.S., *President*, in the Chair.

The Minutes of the last Meeting were read and signed.

Professor RUPERT JONES exhibited and explained a collection of stone implements from Swaziland. Discussion was carried on by Mr. NICOL BROWN and by Mr. A. L. LEWIS, who remarked that the difference between palæolithic and neolithic implements was one of age rather than of shape, and reminded the members that the existence of a palæolithic age in Egypt had first been demonstrated by their former President, General Pitt-Rivers, in 1881.

The PRESIDENT called attention to a very curious collection of flints from the Orange Free State, which had been lent to the Institute by Mr. W. H. PENNING, and which were described by Professor RUPERT JONES.

Dr. GARSON then gave a short sketch of two papers on African Crania, by Mr. FRANK C. SHRUBSALL.

The thanks of the Meeting were accorded to Professor Rupert Jones, Mr. Penning, Mr. Shrubsall, and Dr. Garson.

EXHIBITION OF STONE IMPLEMENTS FROM SWAZILAND, SOUTH AFRICA.

BY PROFESSOR T. RUPERT JONES, F.R.S., Hon. Memb. Anthropol. Inst., etc.

[WITH PLATES III AND IV.]

THIS fine series of large stone implements was sent to England by Mr. Sidney Ryan, having been found by him near Darkton, in the tin-bearing gravels of the M'Babaan or Embabaan River, West Swaziland, South Africa. There are thirteen of them. They consist of siliceous schist, black fine-grained quartzite or chert, and of quartzites composed of grit and breccia of quartz, lydite, and jasper; and there is one smaller implement of crystalline quartz. The large forms vary in length from $4\frac{3}{4}$ by $3\frac{1}{4}$ inches to 8 by $4\frac{1}{2}$ inches, and weigh from $13\frac{3}{4}$ ozs. up to 2 lbs. $7\frac{1}{2}$ ozs. The sharp-oval shape, that is oval with each end sharp, is not common amongst them. They are mostly of a long-ovate shape, sharper at one end than at the other, like the tongue-shaped flint implements, of large size, not infrequently found in England and France, such as those measuring $7\frac{1}{2}$ by $3\frac{1}{4}$ inches (Amiens), and 7 by $3\frac{1}{2}$ inches (Bedford), and $6\frac{1}{4}$ by $3\frac{1}{2}$ inches (Reculver), as figured by Prestwich (*Phil. Trans.*, 1860, Pl. 13, Fig. 5), and Evans (*Archæologia*), vol. 39 (1862) (Pl. 2, Fig. 1, and Pl. 3, Fig. 1), and one from Devonshire $7\frac{1}{2}$ by $3\frac{1}{2}$ inches (*Ancient Stone Implements*, 1872, p. 539).

Size.		Weight.		
Length.	Width.			
Inches.	Inches.	lbs.	ozs.	
8 by	$4\frac{1}{4}$	2	5	Grey quartzitic grit-stone ; obscurely laminated, and somewhat mylonized.
$7\frac{1}{2}$ „	$3\frac{3}{4}$	1	$6\frac{1}{2}$	Black quartz-schist, or schistore lydite ; stained outside ochreous.
7 „	$4\frac{1}{2}$	2	5	Black quartzite, with obscure lamination ; ridges worn down on both faces. Notched on each side near the narrow end.
7 „	4	1	$6\frac{3}{4}$	Black fine-grained quartzite, or lydite. (Figured specimen.)
7 „	4	1	13	Grey fine-grained quartzite, with white quartz veins ; "Blue bar rock."
$6\frac{1}{2}$ „	$4\frac{3}{4}$	1	13	Black quartz-schist, or fine-grained quartzite, with quartz veins.
$6\frac{1}{2}$ „	$4\frac{1}{2}$	2	$7\frac{1}{2}$	Black coarse-grained quartzite, obscurely mylonized.
$6\frac{1}{2}$ „	$3\frac{1}{4}$	1	$0\frac{1}{2}$	Grey quartzitic grit, mylonized.
$6\frac{1}{4}$ „	4	1	12	Black quartzitic breccia. Wide near the butt-end.
6 „	3	11	$0\frac{3}{4}$	Grey quartzitic grit-stone.
(fragment)			14	Black quartzite of not very fine grain. Broken.
$4\frac{3}{4}$ by	$3\frac{1}{4}$		$13\frac{3}{4}$	Black quartzitic breccia ; water-worn.
$3\frac{1}{4}$ „	$2\frac{1}{2}$		$3\frac{1}{2}$	Vein-quartz.

Some few show a partially crushed or beaten edge at one end, usually the thick end or butt. How they were used, and indeed for what purposes they were fabricated, it is difficult to say. Possibly (1) they may have been held in the hand (with or without a cover of skin and hair, or vegetable leaves and fibre), and either the thick end used for hammering or for breaking other stones, or the sharper end used for digging in the soil; one thin-edged all round may have been useful in flaying or skinning animals ; or (2) they may have had a flexible stick, or, better, a pair of such sticks, bent across the middle (as workmen hold a chisel sometimes in coopering, or indenting hot iron, etc.) ; and then it could be wielded with advantage either in war or in peaceful work. The thin edge, however, rarely shows any trace of use or wear; (3) possibly a club or large piece of wood may have had a hole made in it for the reception of one end or other of the implement, and when fastened in used as the local requirements suggested. If we knew more of the local requirements we could all the better hazard conjectures as to the probable adaptations of these implements to useful purposes.

It is not at present possible to assign any special chronological age to these African implements, for the relative age of the gravels in which they are found has not been worked out by geologists. All that we now know is that some of the gravel lies on the hillside above the River Embabaan, and some of it derived from those higher gravels, in the river-bed. Therefore sufficient time must be allowed for the river to have lowered its level in the valley, leaving in succession one or more fringes of the gravel that it had formed and already deposited in its course: and if not making more of such detritus, at least receiving such of the older débris as may fall or be washed down by rains and freshets.

The shape of these implements is similar in general features to many other large examples of tools or weapons of stone, found elsewhere in the world, as, for instance, in India, Somaliland, 10° N. (in North-East Africa, some 2,000 miles and more north of Swaziland 26° S.), as well as in France and England.

In the last-named countries stone implements of this shape and size are associated with certain gravels, the relative age of which has been calculated by Prestwich, on very good philosophical grounds, as being at least 20,000 years old.[1] The old roughly-chipped implements have been, with reason, regarded as older than others, which are more neatly chipped into shape, and in many cases ground to a smooth surface and sharp edge, found in various deposits, caves, and burial mounds of much later age, coming down from prehistoric to historic times. The latter tools are well known as "Neoliths," and the former as "Palæoliths." There are, however, instances of forms more or less like the older type occurring with those of later make and patterns; possibly because, in dressing the flints, the making of the rough types would necessarily result on the hands of many of the fabricators before the shape and fashion of the intended "neolith" would be arrived at. Moreover a taste for that fashion might have either "come up again" (as fashions do nowadays), or some hereditary feeling (long drawn out as some suppose the interval would make it) transmitted from older families.

That the agreement in form of these large foreign examples from Africa with the European examples go to prove them to be what is intended by the term "palæolithic" may be taken for granted. They may be (and indeed, as indicated above, some in the higher river-gravels, must be) of great antiquity, and necessarily must have belonged to a race of men long anterior to modern, and even neolithic times: and they may have been of the first tribe to inhabit the particular locality; but that they were a primæval race is not only not proved, but very unlikely. Primæval man was never inspired to do more than he had practically learned to do in any matter. Experience had led him onwards slowly, from the use of natural fragments of stone, in the art of dressing stone implements, first to the roughly chipped, then to the neatly dressed, and ultimately the evenly ground stone weapon and tool.[2] These great rough tongue-shaped implements show the result of an evolution of manufacturing ingenuity, just as

[1] See T. R. Jones's *Lecture on the Antiquity of Man*, 1877, p. 30.
[2] *Lecture on the Antiquity of Man*, p. 451.

much practically as in successive kinds of knives, forks, steel pens and shot guns. There are some stone implements older even than these "palæoliths." They are called "Eoliths."

Then, on the other hand, the simplest form of stone implement, namely, a flake, may or may not be counted on for indicating a relative age. They must have been made wherever a chipping place existed, whether in new or old times. Therefore by themselves they do not prove anything as to age.

From the Embabaan Mr. Sidney Ryan has sent several flakes of a stone similar to that of some of the implements, therefore probably chipped off by the same old people who made the latter; but they may have been the refuse of later workings. Local details are required, and Mr. Ryan will endeavour to supply us with more local information.

Some of the large implements bear evidence of water-action, or perhaps of blown sand, in the smoothness of their former ridges. Whether this was effected in the present stream or before the dressed stones were left in the gravel, is of course doubtful, though probably attributable to wear and tear in the present river.

With regard to the distribution of stone implements in the gravels of valleys, various hypotheses have been propounded. They may have been dropped into the waters of lakes, river-reaches, and river-mouths, from canoes, and from holes in the winter ice; or they may have been washed in by land-floods from stations on shore, or possibly they may have been derived from old kitchen-middings on the shores of estuaries destroyed by violent storms, or by earthquake-waves or other cataclysms due to land-movements.

As already intimated, it is difficult to assign exactly the uses to which the aborigines put the stone implements found in the gravels. Prestwich, Evans, Lubbock, E. B. Tylor and many others have suggested all the possible uses that a civilized man, restoring in imagination the conditions of those old times, can think of; and doubtlessly they have hit upon many of the methods of their use, and the purposes to which they were applied.[1]

We need not doubt that primæval man utilized such pieces of stone as were at hand, whether broken up by frost or other means, and suited his requirements. "Probably, at first, with little or no alteration of their form; but afterwards he applied them with infinite modification of their shapes to meet his wants in killing, skinning, cutting, fire-making, rubbing, pounding, scraping, drilling, knocking, breaking, chipping, digging, etc.," that is, as tools and instruments in many processes, as well as weapons of offence and defence in fighting with man and beast.

Mr. Ryan discovered at one spot in the neighbouring hills a place where the natives had at some past time manufactured such implements. But the descriptive details have not yet come to hand.

[1] See also the descriptions of Plates A, I to XLII, in the *Reliquiæ Aquitanicæ*, 1865–75.

Mr. Ryan, has, however, very thoughtfully and effectively collected many rock-specimens from the mountain "Ingwenya" near by, and among them we find (as he expected) some at least of the same kind of rocks as those of which the implements consist. This is particularly the case with a dense siliceous rock made up of grit and larger fragments (being a breccia). This grit-stone is seen to be obscurely laminated in the implements, and in one case it shows that in the original rock-mass it has been subjected to a violent squeeze, under lateral pressure, which, doubtless with the aid of water and heat, softened it so as to have forced its particles into long streaky lines, as if they had been under the influence of a great rolling mill, hence this kind of rock is said to have been milled (technically "mylonized").

Of other stone implements, some from Somaliland in Africa, are here exhibited by Mr. H. W. Seton-Karr, now absent from home, and he has asked me to speak of them.[1]

They consist of quartzite and chert.

Mr. H. W. Seton-Karr's notices of his discovery of large stone implements[2] in Somaliland are given in the *Journal Anthropological Institute*, vol. xxv, No. 3, February, 1896, pp. 271–275, Plates XIX and XXI; and vol. xxvi, No. 1, August, 1897, pp. 93–95. He found them on the western face of a low hill, on the right bank of the Issutugan, at one spot, 200 feet above the present level of the river. This is apparently a position analogous to that of some of the Embabaan gravel. One specimen was 7 by 4 inches, as shown in Plate XIX; others he refers to as being 6 and 8 inches in length, and two and three pounds in weight.

Some other stone implements from South Africa have been lent to me by Mr. Nicol Brown, F.G.S. Some from Swaziland (collected by Mr. Leith), not so large as Mr. Ryan's, but more varied in shape, some having a broad chisel-shaped end. Others (collected by Mr. Leith) are from the neighbourhood of Pretoria in the Transvaal: and, though small and very different indeed in other respects from the great implements of Somaliland and Swaziland, these are not only worthy of careful consideration, but lead us to think of some similar specimens (with concave and hooked edges) occurring in considerable numbers in our own country.

Of these it may be said that to some eyes they appear to be simple gravel stones with nothing of interest in them; to others, however, they are gravel stones which have been handled, prepared, and used by some early race of men, whose

[1] Very careful and effective water-colour sketches of larger implements, such as Mr. Seton-Karr has previously laid before this Institute, were exhibited.

[2] In the *Proc. Royal Soc.*, vol. lx, No. 359, September, 1896, pp. 19–21, Sir John Evans supplied some valuable remarks on these interesting specimens, both large and small, some of flint and some of quartzite, from Somaliland, pointing out that they are "Palæolithic" forms, such as occur in Egypt at several hundred feet above the valley of the Nile, Northern Africa, Spain, Central Italy, France, and England; and that "this discovery aids in bridging over the interval between Palæolithic man in Britain and in India; . . . and tends to prove the unity of race between the inhabitants of Asia, Africa, and Europe in Palæolithic times."

local habitation has been removed from the surface of the land. These deeply interesting and almost mysterious implements occur in hundreds, to those who properly look for them, on the chalk plateau of a part of the North Downs in Kent, and therefore have been called "Plateau Implements," rightly enough, but the men who made them are wrongly called "Plateau Men." They did not live there, but high up on the hill-range or mountain, 2,000 feet high, where now the lowly hills of the Wealden area, reduced by subsidence of the land, and by the action of water and ice, rise to about 800 feet.

It was to the acuteness and perseverance of Mr. B. Harrison, of Ightham, that these plateau implements were discovered and gathered in numbers; and to the scientific acumen and geological knowledge of the late Sir Joseph Prestwich that their meaning, status, and place of origin were determined. On account of their having been imbedded in a ferruginous gravel, which is found by digging to be 8 feet from the surface (and of course here and there from time to time disturbed and brought to the top), they are stained with a dark ochreous tint, and have got the name of the "old brownies." The palæoliths that are in the valley-gravels of the district must, like those valleys and their gravels, be of later age than the plateau gravel; and this must have been derived from some land of chalk and flint at a higher level. There is none now; but when the Weald carried on its dome many strata of chalk, between 2,000 and 3,000 feet high (and the Ardennes had at that time a height of about 18,000 feet, owing to the same elevatory causes), there was area enough and sufficient causes for a gravel to be formed on that chalk. This ultimately came down by the rivers and floods, and other natural methods, until it rested at the base of the old hills, on the more level area which is now the Chalk Plateau of the Downs. This has been modified by weather, and was cut off from the remaining uplands of the once lofty range by two parallel intervening valleys, excavated in the Glacial Period.[1]

That there are, even in gravel-walks, small flints of analogous shape, but by no means identical with those in the plateau-gravel, is quite true, and some approach to their peculiar shapes may occasionally be seen elsewhere, but the "Eoliths" are distinct. Doubtless frost (as suggested by Mr. W. Cunnington) in

[1] The relative chronology will be settled when that of the highest elevation of the Weald, and that of the subsequent excavation of the valleys between the Weald and the Downs, shall have been determined. The as yet unsettled age of the Glacial Period itself is, of course, involved in this consideration. Some are still surprised at this bold theory, advanced and supported by my old friend Sir Joseph Prestwich. The probably great changes of climate, due to rearrangements of land and water and of high and low ground, form part of his interesting history of the Wealden hill-ranges, in the sculpturing of which not only aqueous, but glacial, agency must have had a large share. The veteran geologist elaborated his views on the subject of the Pliocene Tertiaries and gravels lying on the flanks of the diminishing island of the Weald in his continuous observations from 1847 to 1890; and he allowed me to give an abstract of them, made under his supervision, to the British Association in 1894; it was published in *Natural Science*, vol. v, No. 32, October, 1894, pp. 269–275. For Sir Joseph Prestwich's Memoir, "On the Primitive Characters of the Flint Implements of the Chalk Plateau of Kent,' etc., see *Journ. Anthrop. Inst.*, vol. xxi (1892), pp. 246, etc. Other papers on the subject are included in Mr. A. S. Kennard's bibliographic list, *Natural Science*, January, 1898, p. 34.

splitting flints can form more or less parallel-sided flakes, often concave and thin on one edge, and convex and thick on the other, and that the thin edge may be readily modified by natural and accidental causes; but the hooked and hollow-curved plateau implements have the concave edge thick, and intentionally chipped and hammered. The local association of "Palæoliths" with the others (known as "Eoliths" and "old brownies") in the plateau-gravel shows that ancient man varied his work; and the fact that "Palæoliths" occur elsewhere without the "Eoliths" does not prove that the two patterns had never been made at the same time. The several well-known orderly series of plateau implements now in museums, showing numbers of definite patterns, are sufficient evidence of intention and design on the part of early man. There are many of both odd-shaped and regular-shaped forms, of which the intended uses are ambiguous for us who know so little of savage life; their hammered edges, however, are not of accidental but of intentional origin.

Explanation of Plates III and IV.

Plate III.

Side-face of a large stone implement from Swaziland. Black siliceous rock (lydite), with very delicate, white, cavernous veins. Natural size.

Plate IV.

Fig. 1.—The same implement, seen edge-wise: left-hand side of Plate III. Natural size.
Fig. 2.—The same implement. Edge-view on right-hand side of Plate III. Natural size.

EXHIBITION OF STONE IMPLEMENTS FROM SOUTH AFRICA.

By W. H. PENNING, F.G.S.

THE collection exhibited by Mr. Penning included some implements in quartzite from the Transvaal, and one obtained from the bottom of a hole for water, sunk through 4 or 5 feet of limestone at the foot of Ooquaan Hill in the Kalihari Desert. Most of the objects, however, were rudely worked stones picked up on the diamond-bearing ground at the mines of Jagersfontein and Koffyfontein, in the Orange Free State, or obtained from the diamond-bearing gravels of the Vaal River, near Klipdrift, in Griqualand West. From the peculiar distribution of such objects Mr. Penning was led to suggest that they may have been used by a primitive or prehistoric people in search of diamonds.



STONE IMPLEMENT, SWAZILAND.



STONE IMPLEMENT, SWAZILAND.

A STUDY OF A-BANTU SKULLS AND CRANIA.

By F. Shrubsall, B.A.

[with plate v.]

This paper is based on an examination of the skulls in the collections at the British Museum, the Museum of the Royal College of Surgeons, the Army Medical Museum at Netley, and the Anatomical Museum of Cambridge University. Altogether, some two hundred crania have been examined, their sex and state of preservation being indicated in the tables of measurements appended.

In all cases the measurements were made with a Flower's craniometer, and a steel tape graduated in millimetres, and the cranial capacities of the skulls in the British Museum and the Anatomical Museum at Cambridge were estimated by No. 8 shot in accordance with Broca's method, and the mean of three measurements not differing by more than 10 c.c. has been recorded.

In the case of skulls in the Museum of the Royal College of Surgeons the capacities quoted are as in the published catalogue, and have been taken by Flower's method, it must be noted that while strictly comparable among themselves, they cannot be contrasted with skulls whose capacity has been estimated with shot.

The skulls were obtained in various localities from 10° N. latitude southwards, and formerly belonged to members of tribes speaking a pure Bantu language. In this paper I have first described the skulls in the order of their geographical distribution and then have proceeded to consider the Bantu-speaking peoples as a whole.

The simplest classification for descriptive purposes is into four heads, a southern group comprising the Zulu-Kaffir peoples, and inhabiting the country south of the Zambesi; an eastern group, living on the shores of the great lakes, and in the districts between these and the Indian Ocean. A western group on the Atlantic littoral south of the Gaboon river, and a northern group in the forest zone of the Mobangi-Welle-Makua valley. To these latter are allied the Monbottu people, but as they do not speak a Bantu tongue, their cranial features are not considered in the present paper.

Southern Bantus.

It is usual to divide the Bantu-speaking peoples south of the Zambesi into three divisions: the true Kaffirs to the east, the Bechuanas in the centre, and the Ova-herrero on the west, the latter being, in many respects, closely allied to the western Bantus. Each of these divisions is represented in the various collections

in English Museums, the first, however, being by far the most numerous. They are considered in order below.

Eastern or Zulu-Kaffir Group.

The mountain chain of the Drakensberg, which runs nearly parallel to the coast, serves to separate the western from the central Kaffir tribes, the two sections differing from one another physically as well as ethnically, the coast people being stronger and better developed, as well as in a more advanced social and moral condition.

The names of the tribes are, as a rule, derived from the name or title of their first great chief or founder, and most of them can be traced back to a common origin some five or six hundred years ago.[1] In order from north to south are the Mozambique tribes occupying the sea coast between the Zambesi and Limpopo rivers.

These are now largely intermixed with Zulus and Swazis, who form a dominant class in Gazaland, and are known as Laudins. The chief aboriginal groups, the Chobis, Bahlengwe, and Ba-toka, are said to be members of the Ama-tonga stock.

The Ama-swazi, between the Limpopo and Pongolo rivers on the borders of the Transvaal.

The Ama-tonga, around Delagoa Bay.

The Ama-zulu, a group of small independent tribes welded together by the military system of Chaka at the beginning of this century into the dominant nation of South Africa.

The Ama-fingo (literally wanderers), composed of the remnants of various tribes who took refuge in the British colony of Natal, after a crushing defeat by Chaka.

The Ama-xesibe and Ama-baca, remnants of tribes, formerly of considerable importance, found between the Umzinkulu and Umzimvubu rivers.

The Ama-mpondo, who inhabit the district known as Pondoland, along the bank of the lower Umzimvubu.

The Ama-mpondumisi, east of Umtata.

The Aba-tembu, occupying the district between the Umtata and Kei rivers.

The Ama-xosa, who formerly inhabited the district between the Kei and Fish rivers, but who were driven during the Kaffir wars into the Transkei.

Of these tribes, the more important for descriptive purposes, because the best represented in English museums, are the Ama-zulu, the Ama-mpondo, the Aba-tembu, and the Ama-xosa. Fritsch[2] and de Quatrefages[3] in their monographs have taken the Ama-xosa as the type of the Kaffir peoples, although the Aba-tembu claim to be the older family, and say that the Ama-xosa have much Hottentot blood in their veins.

[1] *v. History of South Africa.* G. McCall Theal.

[2] *Die Eingeborenen Süd Afrikas.* Breslau, 1872.

[3] *Crania Ethnica.*

Commencing the detailed examination by a study of cranial capacity, we find skulls of this race are large, heavy, and of good capacity, while the range of individual variation is greater than that between different tribes.

The averages obtained are as follows :—

	Skulls cubed with shot.		Skulls cubed with seed.	
	♂	♀	♂	♀
Ama-xosa	1570	1300	1515	1410
Ama-mpondo	1545	—	—	1300
Ama-zulu	1600	—	1450	1240
Mozambique	1460	1230	—	—
All Kaffirs (including those whose tribe is uncertain)....	1540	1320	1460	1310

The individual variation in the male is from 1240–1670 c.c., and in the female 1230–1420 c.c., while the mean sexual difference reaches the high figures of 220 c.c. in shot cubed skulls, and 150 c.c. in seed cubed skulls. This result agrees closely with the observations of Broca, who, after cubing eighty-four skulls of African negroes, found a mean sexual variation of 186 c.c.

The table shows that while the coast Kaffirs fall into the mega-cephalic group of Flower, all would be classed as "cranes moyens" of Broca. The capacity of Kaffir skulls is considerably greater than that of other African negroes, the average being :—

West Coast negro	1420
Central Lakes negro	1430
Koranna	1425
True Hottentot	1365

These figures, it may be noticed, lend no support to the view that the Ama-xosa differ from the other groups, by being further crossed with the Hottentots.

Viewed in norma verticalis skulls of this group present an oval outline varying between the Forma ovoides and the Forma ellipsoides of Sergi; both frontal and parietal eminences are prominent, more especially in the female. The crania of the Ama-xosa and Ama-zulu are broader and better filled than those of the Aba-tembu or Ama-mpondo, among whom the occiput is capsular and frequently presents a distinct *renflement*. The greatest breadth is usually bi-parietal but in some cases is bi-temporal. In view of the stress laid by Barnard Davis on the relations between the various diameters of the cranium, as a means of distinguishing Zulu from Kaffir skulls, some interest attaches to the following table in which is presented the average relation of such diameters to the maximum breadth (= 100).

	Minimum Frontal.	Inter-pterion.	Bi-stephanic.	Bi-asteric.
All Kaffirs	72·5	79·7	80·4	80·9
Ama-xosa	74·2	80·4	80·6	80·5
Ama-mpondo	79·1	85·8	90·3	85·1
Aba-tembu	73·5	81·3	80·1	82·2
Ama-zulu	73·7	78·6	84	78·6
Mozambique	71·3	80·8	82·5	83·7

This shows that the occipital bone is broader proportionally in the Kaffirs than in the Zulus, and that the latter skulls are more symmetrically oval than the former: otherwise the table indicates resemblances rather than differences. Most Kaffir crania appear cryptozygous or at most mesozygous, while the Zulu and Mozambique skulls are phenozygous, their zygomatic arches being stronger and broader than those of the former tribes. In the Ama-xosa the extremity of the alveolar process of the maxilla can be seen, so that there is a certain degree of alveolar prognathism which may or may not be dentally increased according to the varying obliquity of the teeth in their sockets; the Aba-tembu and Ama-zulu are more orthognathous while the Ama-mpondo and Mozambique skulls are markedly prognathous.

The average alveolar indices for these skulls are :—

	♂	♀
All Kaffirs	100·4	99·9
Ama-xosa	100·9	99·3
Aba-tembu	99·6	—
Ama-mpondo	102	98
Ama-zulu	100·1	101·1
Mozambique	103·8	—

Classifying the numbers obtained for this index according to Flower's divisions, we obtain the following table of percentages :—

	Kaffirs (56 skulls).	Zulus (20 skulls).
Orthognathous	26·8	20
Mesognathous	46·4	50
Prognathous	26·8	30

The variation is from 94 to 109, a range of 15 units, which might be explained as indicating the admixture of orthognathous and prognathous races, the former element being supplied by the displaced Bushman-Hottentot peoples. In this connection it should be observed that the most orthognathous of the southern Bantus are those who occupy country not entirely abandoned by the Bushmen, *e.g.* the Aba-tembu, the Basuto, the Ova-herrero and the western Bantu group, yet at the same time a division into prognathous and orthognathous sections carries with it no distinction of other indices, we cannot say that the orthognathous skulls are more brachycephalic and microseme or *vice versâ*.

In the seriation table of this index the skulls are distributed in a fairly uniform manner between 97 and 106, and in this, as in all other such tables relating to the Bantu-speaking peoples of South Africa, it is the resemblances and uniformity rather than the differences and foci of regression that strike the eye.

In Kaffir as in all other South African crania the sutures are very simple (Nos. 2 and 3 in Broca's scale), they appear to synostose at the same period of life as in Europeans, the first signs of such a change occurring at the pterion and in the lambdoid suture, the coronal suture remaining open until late in life. Examination of the Kaffir crania does not confirm Beclard's statement that wormian bones in the lambdoid suture are equally common in Europeans and Negroes; in this series, at any rate, such bones are few and far between. There is, however, an exception, wormian bones being by no means uncommon in Zulu skulls: this is interesting in view of de Quatrefages' conclusion (*Histoire générale des races humaines*) that there is a considerable Semitic intermixture in this race, wormian bones in the lambdoid suture being very common in all North African peoples. Kaffir crania are on the average long and fairly broad, the mean cephalic (length-breadth, the former being taken as 100) indices being as follows:—

	♂		♀	
Kaffirs (all examined, excluding Zulus) ...	(56)	72·5	(9)	72·9
Ama-xosa	(8)	72·4	(3)	74·1
Aba-tembu	(6)	70·6		—
Ama-mpondo	(2)	69·1	(1)	72·5
Ama-zulu	(21)	74·8	(4)	72·9
Mozambique	(7)	72·2		—

The figures in brackets after the name of the tribe indicate the number of skulls of either sex examined.

From this table the close similarity between all the Kaffir peoples is at once

noticeable, the tribal differences being less than the individual variations. The Zulu are seen to be more mesaticephalic than any other members of the South African Bantu-speaking group, and to present the peculiarity of a lower cephalic index (by 2 units on the average) for females than for males, whereas among the Kaffirs the reverse is the case. The seriation of this index seems to indicate racial uniformity rather than the fusion of distinct types, the curve being of the nature of a plateau, and the focus of regression, so far as one may be said to exist at all, being in the neighbourhood of the average index.

Comparisons between Zulus and Kaffirs are also furthered by classifying the indices of the male skulls according to Broca's divisions :—

	Kaffir.	Zulu.
Dolichocephalic	76·4	70
Sub-dolichocephalic	20	20
Mesaticephalic	3·6	5
Sub-brachycephalic	—	5
Brachycephalic	—	—

This table, together with the seriations, shows that the separation of the tribes by the cephalic index is apparent rather than real, and may be explained by the presence of a small brachycephalic element in the latter.

Viewed in norma occipitalis appearances vary somewhat in the different tribes. In the Ama-xosa and the Aba-tembu the roof is rounded off with a wide curve into a somewhat flattened arch, resembling closely the condition met with among the Koranna Hottentots. The Zulu and Ama-mpondo crania are pentagonal in outline, with a broad base, flattened sides and a somewhat rounded roof, they are higher than those of other Kaffirs. The mastoid processes are large and strong, the post-zygomatic ridge being very distinct, the conceptaculæ cerebelli on the other hand are not so well developed. Zulu crania rest naturally on the mastoid processes, whereas those of Kaffirs most frequently rest on the condyles only or on the voluminous conceptaculæ cerebelli. Mozambique crania viewed from the back present a pentagonal appearance with a slight median sagittal groove and slightly rounded side walls.

The mastoid processes are large and prominent, but the conceptaculæ are relatively only slightly developed. Contrasting breadth and height the mean altitudinal indices[1] are :—

[1] The breadth-height altitudinal index is the numerical expression of $\frac{\text{height} \times 100}{\text{breadth}}$, and to its subdivisions I have confined the terms tapeino, metrio, and akrocephalic.

	♂	♀
All Kaffirs (excluding Zulus) ...	100·1	100
Ama-xosa	100·6	98·4
Aba-tembu	101·7	—
Ama-mpondo	101·5	103·9
Ama-zulu	102	102·9
Mozambique	96·7	—

It should, however, be noted that in *Crania Ethnica* de Quatrefages and Hamy give the mean index of 13 ♂ Mozambiques as 100 and 4 ♀ as 102·3, the low figures obtained in the present series may possibly be due to the smaller number (6) examined. The other indices agree closely in the two cases, those in *Crania Ethnica* being Ama-xosa (6 ♂) 99·2, Ama-zulu (2 ♂) 102·9.

The percentage of male skulls in the various divisions of Broca is:—

	Kaffir.	Zulu.
Tapeino-cephalic	—	—
Metrio-cephalic	17	15·8
Akro-cephalic	83	84·2

The seriations of this index are remarkably uniform; the Zulu skulls are on the whole rather higher as well as broader than those of other Kaffir tribes, the difference again being due to the presence of a small number of skulls with a higher index. It will be noticed on reference to the tables of measurements, that the more akro-cephalic skulls are also the more brachycephalic, so that the infused element, if such exists among the Zulus, should be possessed of these characters. Now, of the peoples known to have come in contact with the Bantus, these characters could not have been transmitted by the Bushman-Hottentot group, nor by the dwarf races of Central Africa; the northern European visited the district too late to account for them in this series of skulls, most of which are those of Zulu warriors killed in the early decades of the present century, so that it is a tempting hypothesis to suppose that these characters are due to Arabic influences, especially as several observers have noted Semitic traits in the Ama-zulu. The vast numbers of ruined buildings and fortifications met with from Sofala to Zimbabwe, and variously assigned to Phœnician or Himyaritic architects,[1] are evidences of contact in early times between the Semitic peoples and the tribes of South Africa, while on the same coast, but a little further north, the

[1] *v.* Bent. *Ruined cities of Mashonaland.*

leading traders even at the present day are Arabs. One difficulty to explain on this hypothesis is why the brachycephalic element should be more dominant among the Zulu than among the Kaffir or Mozambique tribes, who have been equally if not in some cases more exposed to foreign intermixture, and another is that the hypsisteno-brachycephalic type is only one out of several found among the Semitic races.

The length-height index[1] is perhaps best considered in connection with the foregoing, the mean indices show that the skulls of the coast Bantus are high rather than low.

	♂	♀
Kaffirs (all examined, excluding Zulus)	72·5	73·3
Ama-xosa	72·8	73·3
Aba-tembu	71·8	—
Ama-mpondo	70·1	75·3
Ama-zulu	75	74·9
Mozambique	69·7	—

The division of the males into classes being—

	Kaffir.	Zulu.
Chamaecephalic	44·6	15
Orthocephalic (72–75)[2]	33·9	35
Hypsicephalic	21·4	50

The sagittal curves of skulls of this group present slight tribal differences. In the Ama-xosa it passes upwards and forwards from the nasion over a somewhat prominent glabella; it is flattened for a short distance at the ophryon, and then curves gently upwards and backwards to the bregma, the sharpest part being at the junction of the middle and posterior thirds of the frontal bone.

Behind the bregma there is a faintly marked concavity; this is especially distinct in a few crania which lay themselves open to the suspicion of annular deformation. The highest point of the whole is usually at the junction of the anterior and middle thirds of the sagittal suture. From this point the curve at once passes more rapidly backwards and downwards through the obelion, in which region there is some flattening to the lambda, whence after falling nearly vertically to the inion it runs obliquely downwards and forwards to the opisthion. The occiput is full, but not so distinctly capsular as in some other African skulls. In the Ama-mpondo the forehead at first sight appears to be more retreating, though

[1] The length-height index is the numerical expression of $\frac{\text{height} \times 100}{\text{length}}$, to its subdivisions I have confined the terms chamae, ortho, and hypsicephalic.

[2] Not 70–75 as in the Frankfort agreement.

in reality such is not the case, the post-bregmatic flattening is not so well marked while the occiput is capsular, and frequently presents a *renflement.* The sagittal curve of the Aba-tembu differs from that of the Ama-xosa in being more flattened both in the post-bregmatic and obelial regions, while the occiput, though not characterised by distinct *renflement,* is fuller and broader than in other Kaffir crania. Among the Ama-zulu the glabella and superciliary ridges are very conspicuous, there is a slight flattening at the ophryon, and behind this the sagittal curve rises over a full forehead to attain its highest point at or about the bregma. Behind this there is, in quite fifty per cent. of cases, a slight annular constriction, after which the curve passes evenly round to just behind the lambda whence the supraspinous portion of the occipital arc descends nearly vertically. In Mozambique crania the sagittal curve may be seen to pass over a prominent glabella, though somewhat obscured by the superciliary ridges, and then to rise uniformly over a full forehead to the bregma which forms the summit of the curve. Behind this point there is a flattening which extends over the anterior half of the parietal bone, and then the curve sinks gradually to the lambda, presenting however some degree of obelial flattening, the supra-spinous portion of the occipital squama is almost vertical, while from the inion the curve slopes downwards and forwards to the opisthion.

Of the various subdivisions of the sagittal curve,[1] the parietal is decidedly the longest in the Ama-xosa, the frontal arc being rather longer than the occipital. In this respect the Xosa agree with the Pondo and differ from the Tembu and Zulu among whom the frontal arc is the longest.

The relation of the sub-cerebral (nasio-ophryal portion) to the total frontal curve is

All Kaffirs	19·5
Ama-xosa	22
Aba-tembu	19·5
Ama-mpondo	16·4
Ama-zulu	18·4
Mozambique	20

The percentage distribution among the various components of the total sagittal curve in male skulls is:—

	Frontal.	Parietal.	Occipital.
All Kaffirs	34·7	34	31·3
Ama-xosa	33·3	35·4	31·3
Aba-tembu	34·7	34·1	31·2
Ama-mpondo	35	35·2	29·7
Ama-zulu	35·4	34·4	30·2
Mozambique	34·7	35·2	30·2

[1] The sagittal curve is measured from the nasion over the bregma and occiput to the opisthion.

This indicates that the Zulu are the most frontally and the Ama-xosa the most occipitally developed.

Comparisons of these results with those for other races are not uninteresting:—

	Frontal.	Parietal.	Occipital.
64 Kaffir ♂	34·7	34	31·3
29 Australian aborigines ♂	34·8	34·5	30·7
16 Anglo-Saxon ♂	34·5	34·5	31·1
54 Guanches	33·5	34·4	31·7

This shows how constant is the subdivision of the sagittal curve, the individual being greater than the racial variations even when most diverse examples are selected.

Making similar comparisons to the above for other curves we find:—

	Relation supra-auricular to total transverse[1] (= 100).	Relation pre-auricular to total horizontal[2] (= 100).
All Kaffirs	68·1	47·3
Ama-xosa	69·4	47·9
Ama-tembu	67·1	48
Ama-mpondo	70	49·8
Ama-zulu	67·1	46·4
Mozambique	68·1	46

In Zulu crania the external auditory meatus is placed rather far forwards, so that in spite of the considerable frontal development indicated by the measurements of the sagittal curve, a relatively smaller portion of the total horizontal curve is preauricular than in the crania of the previously described ethnic groups.

When skulls of this group are viewed in norma lateralis the face is seen to be a much more prominent object than in the Bushman-Hottentot series, although the profile is far from being so striking as in Europeans.

The forehead is full and vertical but is sometimes given a false appearance of obliquity by strong and overhanging superciliary ridges.

In Kaffir crania the lineæ temporales are well defined and can be traced back the outer to the mastoid process, the inner into continuity with the postzygomatic ridge. The supramastoid groove, although not actually absent, is by no means the

[1] The total transverse curve is measured by passing the tape completely round the skull just in front of the external auditory meatus. The supra-auricular portion being measured between the post-zygomatic ridges on either side.

[2] The total horizontal curve is taken over the ophryon in accordance with the methods of Professors Broca and Flower.

prominent feature so characteristic of the Bushmen-Hottentots. The zygomata are strong but the postzygomatic ridges are not so distinct as might have been expected, considering the massive bones and well marked muscular impressions. The mastoid apophyses are of moderate size, with deep digastric grooves, but they never attain the dimensions met with in European crania; the paramastoid processes are frequently very distinct, and the styloids as a rule are large and strong. The temporal fossæ are flattened and uniform, though the posterior inferior angle of the frontal bone may present a slight bulging outwards, the stenocrotaphy found in Bush crania is absent in the Kaffir. Anomalies and wormian bones at pterion are not infrequent, more especially in the Ama-xosa, in whom they would appear to be associated with Koranna intermixture, wormian bones in the squamous suture being a characteristic of skulls of the latter race. The face is fairly prominent, there being considerable alveolar prognathism coupled in some cases with protruding teeth. The nasal bones project somewhat at the root of the nose but do not form a very conspicuous feature in profile.

The temporal fossæ are in most cases better filled in Zulu than in Kaffir crania, the linæ temporales and the supra-mastoid ridges are, however, not so well-marked. The face, and especially the nose, is prominent and often finely chiselled, pterion is usually of the normal H form, but a fronto-squamosal articulation is not altogether uncommon. In Zulu crania, at any rate as far as the collection in the College of Surgeons is concerned, there would seem to be a tendency towards the division of the malar bones, all varieties being met with, but the number of skulls examined (twenty-five in all) belonging to this race is insufficient to permit of stress being laid on this as a racial characteristic.

In Mozambique skulls the temporale squamæ are flattened, while the fossal surface of the frontal bone is considerably bulged out, producing a gutter at pterion, and has a consequent ill-filled appearance of the fossa as a whole. The face is fairly prominent, the upper part being somewhat orthognathous, while the lower is characterised by a considerable degree of alveolar prognathism. The nose, which is concave from above downwards, is by no means hidden in profile, and the malars although voluminous do not serve specially to flatten the face.

Among the principal characters seen in norma facialis are the broad vertical forehead, the fairly prominent glabella which overhangs the root of the nose and is thrown into greater relief by the flattening of the sagittal curve in the region of the ophryon, the superciliary ridges, which are well marked, especially for their inner half and the frontal eminences usually distinct and prominent. The forehead is much broader in the Ama-xosa than in the other groups. A depression is found above the external angular process of the frontal bone; it is most distinct in the Ama-xosa and Ama-mpondo, but is neither so deep nor so clearly defined as in the series of Bush crania. The broad appearance of the face is due to the strength and fulness of the malars, the actual facial indices being within the boundaries of leptoprosopy. The Ama-mpondo are more leptoprosopic than the rest, although they are at the same time more platyopic.

The various facial indices are tabulated in order below:—

	Upper Facial.		Total Facial.		Maxillary Facial.
	Kollmann.	Broca.	Kollmann.	Broca.	Virchow.
All Kaffirs (excluding Zulus)	51·8	69·9	87·0	105·6	72·2
Ama-xosa	51·8	72·0	91·5	110·0	76·5
Aba-tembu	52·3	70·3	86·4	104·7	75·1
Ama-mpondo....	54·8	71·8	94·4	112·1	79·1
Ama-zulu	52·9	70·7	91·1	110·4	72·2
Mozambique	53·0	72·1	88·8	108·6	71·5

Although the average of all the skulls is leptoprosopic, yet when they are examined by the method of seriations a few are seen to be chamæprosopic, these being especially numerous among the Kaffirs as opposed to the Zulus, the proportions being:—

	Facial Index of Kollmann.			Naso Malar Index.	
	Kaffir.	Zulu.		Kaffir.	Zulu.
Chamæprosopic	33·3	14·3	Platyopic	48·6	55
			Mesopic	31·4	25
Leptoprosopic	66·7	85·7	Prosopic	20	20

One can distinguish a chamæprosopic platyopic from a leptoprosopic prosopic group with all intermediate forms; such a division is harmonious as far as facial features are concerned, but does not appear to be definitely associated with any cranial peculiarities. If, however, these elements had been supplied by Bushmen and Semites respectively, this could not be wondered at, as both groups would tend to raise the cephalic index.

Applying the classification employed by Professor Kollmann for European crania to those from South Africa, it will be seen that all possible types appear except the chamæprosopic brachycephal, the distribution being:—

	Kaffir.	Zulu.
Chamæprosope dolichocephals ...	18·7	7·1
Chamæprosope mesocephals ...	12·5	7·1
Chamæprosope brachycephals ...	—	—
Leptoprosope dolichocephals ...	50·0	50·0
Leptoprosope mesocephals	18·7	28·6
Leptoprosope brachycephals ...	—	7·1

The shape of the nasal bones and of the apertura pyriformis is not constant, the tendency being towards a flattened form of nose with an inconspicuous nasal spine (Nos. 1 and 2 in Broca's scale), and an inferior margin of the forma infantalis. Among the Aba-tembu the inferior margin of the aperture is rounded off and slight simian grooves are very frequent. As far as the nasal bones are concerned two main types may be distinguished. In the one the outline of the naso-maxillary suture is concave outwards, the narrowest part of the nasal bones being at the middle of the bridge, below which they widen out rapidly, so that the transverse dimension at the upper border of the apertura pyriformis is much greater than that at the nasion. In this variety the nasal bones are very concave from above downwards, though their lower ends project a little in a convex curve.

In the second type the nasal bones are of practically uniform breadth throughout their entire length (so that the naso-maxillary suture is almost straight) and present but a slight forward concavity when viewed in profile. This latter type is the rarer in Kaffirs, although it is met with not infrequently in Bushmen, and is quite common among the negro races of North-Western and Central Africa. Differences occur not only in the shape of the nasal bones but also in the outline of the aperture itself, which may be truly pyriform or may present a truncated appearance. In either variety there are broad and low side walls which round off into the floor, giving rise in some cases to distinct simian grooves.

A study of the nasal index indicates that the east coast Bantus are on the average platyrhine, although the seriations show the presence among the Kaffirs of a small lepto- and mesorhine group.

	♂	♀
All Kaffirs (excluding Zulus) ...	57·2	61·1
Ama-xosa	57·8	60
Aba-tembu	57	—
Ama-zulu	58·5	55·1
Mozambique	56·8	—

From the above the Kaffir tribes would appear to be more platyrhine than is indicated by previously published statistics.

The orbits are squarish with thick rounded borders, the encircling bones having the appearance of great strength and solidity; the bidacryc interval is wide and the lachrymal canals are of unusually large size. Although a seriation of the orbital index shows a wide range from 75–97 (22 units), the averages for the different tribes closely approximate.

	♂	♀
All Kaffirs	86·2	88·7
Ama-xosa	85·3	90·6
Aba-tembu	83·9	—
Ama-mpondo	82	86·8
Ama-zulu	84·6	89
Mozambique	91	—

The orbits are occasionally a symmetrical, there being a difference of one or two units between the indices on either side.

The general features and cast of countenance can be observed from the following tables in which the orbital and nasal indices of male skulls are classified in percentages in accordance with the usual terminology.

	Kaffir.	Zulu.		Kaffir.	Zulu.
Platyrhine	77·3	76·2	Microseme	29·3	45·5
Mesorhine	20·8	19	Mesoseme	36·2	27·3
Leptorhine	1·9	4·8	Megaseme	34·5	27·3

The upper jaw projects considerably and the prognathism of the Kaffir tribes appears to be mainly subnasal. The protrusion of the teeth varies greatly, in some being very prominent while in others they are set quite vertically. In norma basilaris, the palate, usually hypsiloid in outline, is seen to be wide and deep with very strong alveolar borders. The foramen magnum is always large, but of a somewhat variable form. The average palatal indices are:—

	Staphylinic.	Uranic. [1]
All Kaffirs	71·6	112·2
Ama-xosa	69·5	110
Aba-tembu	71·8	109·7
Ama-zulu	72·9	116·9
Mozambique	66·7	107·5

The teeth are large and usually but slightly worn down, the third molars as a rule are much the smallest. The first molars are frequently carious while the rest are perfectly healthy. In the Zulu skulls the incisors are always missing,

[1] The staphylinic index is based on internal and the uranic on external palatal measurements, the breadth in either case being taken at the level of the second molar tooth. The staphylinic index is that of Prof. Virchow, the uranic that of Prof. Flower.

even when the other teeth are perfect; this would seem to be due to post mortem accidents rather than to any ethnic peculiarity. In the Mozambique crania the teeth are relatively and actually larger than in the other tribes, the dental index verging on macrodontism in spite of the considerable basi-nasal length.

Flower's dental index is[1]:—

All Kaffirs	40·8
Ama-xosa	42·5
Aba-tembu	40·1
Ama-mpondo	44·5
Ama-zulu	43·4
Mozambique	45·4

The lower jaw is very strong and heavy but not so disproportionately massive as in some of the west coast negroes; it is characterized by a square, somewhat retreating chin, a slightly everted angle, high symphysis, and deep sigmoid notch. The chin is more pointed in the Pondo and Tembu, the sigmoid notch is shallower in the Xosa, but in none do these features reach the extreme met with in Bush crania, which are thus readily distinguished from those of all other races.

Collignon's mandibular index is as follows[2]:—

Kaffir	83·5
Zulu	79·5
Mozambique	83·7

The above description applies to the skulls of the ordinary Bantus of the south-eastern seaboard of Africa, but among the inhabitants of the northern part of Mozambique territory, a second type of cranium, whose characters may be briefly summed up by the term infantile, makes its appearance. Such a skull appears ellipsoidal and cryptozygous, but presents a considerable degree of prognathism. The cranial roof may best be described as a surbased vault with the sides rounded off. All muscular ridges and impressions are poorly marked, the temporal fossæ are ill-filled, the glabella and superciliary ridges almost absent, the occiput is capsular and the sagittal curve presents bregmatic and obebral flattenings. The facial characters are the flattened very platyrhine nose, megaseme orbits, small malars, hypsiloid palate and projecting teeth. As in many respects crania of this type resemble those of Bushmen, and of some of the peoples of the western littoral, it would seem possible that in the east, as in the west and south of the dark continent, they represent the remains of the pre-Bantu inhabitants driven to the more unhealthy or inaccessible parts by the powerful invaders of their country. The mutual resemblance to skulls from such widely separated spots as the Gold Coast, the Fernand Vaz River, Cape Colony, and Imperial British East Africa, points to a very wide distribution for this type which will be further considered later.

[1] For the upper dental series.

[2] Collignon's index $= \frac{\text{Height of mandible at level of second molar} \times 100.}{\text{Height of mandible at level of symphysis.}}$

Central or Bechuana-Basuto group.

It is usual to describe under this heading two distinct series of tribes, a southern or Basuto and a northern or Bechuana.

The southern group consists of a number of tribes, dispossessed of their territory and driven as fugitives before the victorious arms of Chaka, who were gathered together into a strong nation by Mosesh around the impregnable citadel of Thaba Bosigo. These consisted of the Baphuti, who stretched south along the banks of the Orange river; five small tribes who occupied the valley of the Caledon ; the Bataŭng from the Sand river, and the remnants of various tribes scattered along the southern bank of the Vaal.

Besides these elements, the modern Basuto nation includes the remnants of the marauding hordes of the Mantati, so named after their great chieftainess, Ma-ntatisi. These bands were made up of members of the Battokua and Basia tribes, from the country round Harrismith and the owners of the Wilge, Mill and Elands rivers, who fled before the onrush of the Zulu impis. Fritsch in his monograph disputes the origin thus assigned to the Mantati; he concludes that they did not come from so far south, and belong to the Bechuana rather than to the Zulu race; he points out that their warriors wielded a variety of battle-axe (*Würfeisen*) in shape something between the axe of the Bechuana and that of the Niam-niam, whereas the coast tribes always used the assegai. As, however, the tribe got dispersed in the early part of this century after a severe defeat by the Griquas under Waterboer, followed by the devastation of their country by the Zulus, on their way to form the Matabele kingdom, the name came to be applied to any wandering tribes who earned a precarious living by plundering their weaker or unprepared neighbours.

It is certain that the descendants of the Mantati are now mingled with the Basutos, although their ancestors might have been more correctly classed in the Bechuana sub-division of this group. Some hundred miles north-west of the Lesuto is another section of the Bantu race, the Bechuana. Their most southern tribe, the Batlapin, is not pure, but have Koranna blood in their veins. Northward of these are pure blooded Bahurutsi, Bangwaketsi and Bakwena, who earlier in the century occupied the country forming the watershed between the Vaal and the Limpopo. Northwards, this race is continued by the Barolong and Bamangwato to the supposed great Barotse kingdom on the upper waters of the Zambesi. An offshoot of this race were the Mashonas, who were largely dispossessed of their territory and enslaved by the Zulu army under Moslekatze, who founded the Matabele kingdom. These tribes have evidently been migrating steadily southwards. According to the traditions of the Barolong, their ancestors formerly occupied a mountainous country in which the sun at one season of the year was on their right when they looked towards it at sunrise, so they apparently came from a district to the west of the great lakes. It has been calculated that they must have left that neighbourhood about the year 1400.

The authors of *Crania Ethnica* regard the Bechuana as intermediate between the Xosas and the negroes of the great lakes; such a conclusion may be accepted for the southern group; the northern being practically identical with the Anyanja of the country between the Shiré and the Zambesi. To avoid repetition, I have in this part of the paper confined my description to the southern or Basuto-Mantati group.

These differ from their northern relatives chiefly in being more tapeinocephalic. Their crania may be described as ellipsoidal in outline, crypto or mesozygous and fairly prognathous.

Cephalic index 71·3. Alveolar index 101·5.

In norma occipitalis they are pentagonal in outline, with a slight median sagittal crest and straight side walls. In the Mantati the coronal curve is flattened and wide.

The height indices are L.H. 70·6; B.H. 99·1.

The lower part of the cranium presents a very square appearance with prominent mastoids and small conceptaculæ cerebelli. The sagittal curve is more uniform than in the previously described coast Kaffirs, the post-bregmatic and obelial depressions not being distinct. The glabella is slight, but the occiput is full and rounded, frequently exhibiting a *renflement*. The Mantati are especially characterised by their considerable frontal development, the frontal arc constituting 37 per cent. of the sagittal curve and the preauricular portion 48·5 per cent. of the total horizontal curve.

The temporal fossæ are ill-filled, but the muscular impressions are very distinct. The face is more chamæprosopic than that of the eastern tribes, the orbits are microseme or mesoseme, and the nose although shorter is less platyrhine and not so broad in the bridge.

Orbital index 87. Nasal index 55·5.

The malars are not very prominent, the mandible is strong and square, the palate hypsiloid and the teeth large and in good condition.

The mandibular index of Collignon is 81·5, being intermediate between Ama-xosa and Ama-zulu.

The cranial capacity is less than that of the preceding group, the average for shot cubed skulls being 1420 c.c.

All the features of the skulls of the mountain Kaffirs are thus seen to be those of the coast Bantus but somewhat softened down and more infantile.

The Western Group.

This consists of the Ova-herero, Ova-mpo and Ba-kalahari tribes, and is not represented in any of the collections I have examined. They are said to closely resemble the west coast group of Bantus (q.v.), and have been fully described by

Fritsch,[1] and by Virchow,[2], [3]. For purposes of comparison I append a list of the more important indices given by them.

	Herero.		Ovambo.
	Fritsch.	Virchow.	Virchow.
Cephalic	72·4	71·6	72·7
Altitudinal (length)	76·5	77·9	75·4
Altitudinal (breadth)	105·7	—	—
Orbital...	89·7	89·8	80·5
Nasal	—	56·2	52
Alveolar	—	103·1	103·9
Capacity	—	1640	1512

Western Bantus.

The Bantu-speaking people stretch up the west coast of Africa as far as the Cameroons, the boundary between them and the true negro being, according to Sir H. H. Johnston, the Rio del Rey. The more northern tribes are evidently of very mixed origin, as shown by the sudden rise of the cephalic index, and contain so many elements that the task of disentanglement would be too protracted to attempt within the limits of this paper. I hope, however, at another time to describe the craniological features of the natives of the Gaboon and Cameroon districts. Of the tribes speaking pure Bantu idioms the following geographical classification may be adopted—

The M-benga, who inhabit Corisco bay and island.

The Cabinda, who occupy the sea coast north of the mouth of the Congo.

The Bakongo, stretching from the river as far south as Ambriz, and who constituted a powerful empire at the time the Portuguese first occupied the country.

The A-bunda, who inhabit the hinterland of Angola and Benguela, and are divided into two main classes; the Ba-nano or highlanders and the Ba-buero or lowlanders. It is perhaps doubtful whether the second of these groups can claim to be ethnically a pure race. Sir H. H. Johnston writes of them[4]: "In such a littoral population as the Kabinda or Loango there are two types of race. One the Bantu, a fine, tall, upright man with delicately small hands and well shaped

[1] *Süd Afrika's Eingeborenen.*

[2] NEUE ANTHROPOLOGISCHE BEOBACHTUNGEN AUS SÜDWEST AFRIKA. *Verhandlungen der Berliner Gesellschaft für Anthropologie, &c., Jahrgang*, 1895.

[3] *Ditto ditto ditto Jahrgang*, 1887.

[4] *The River Congo.*

feet, a fine face, high thin nose, beard, moustache, and a plentiful crop of hair; the other an ill-shaped, loosely made figure, with splay feet, high calves, a retreating chin, blubber lips, no hair about the face, and the wool on his head close and crisply curled."

Considerable interest attaches to skulls from this part of Africa, owing to the paucity of previous descriptions. In this paper six crania are described, one from Corisco, at present in the Vesalianum at Basle; one from Congo, and two from Loanda in the Anatomical Museum at Cambridge and two others in the Museum of the Royal College of Surgeons, which come from Angola and Benguela respectively. These crania of Western Bantus present very many general resemblances to those of the previously described southern group, although there are differences in detail, the former being coarse in appearance with features far less finely chiselled. The skull from Corisco is of small capacity (1225 c.c.), oval in outline, phænozygous and somewhat prognathous (alveolar index = 101). The parietal eminences are prominent and the frontal eminences have fused in the middle line, forming a bombé forehead. The cranium is subdolichocephalic, the index being 75·9. All the sutures are open and simple.

In norma occipitalis it presents a pentagonal outline, though both roof and sides are somewhat rounded. The mastoids are small and the conceptaculæ cerebelli are full and prominent. The skull is akrocephalic, the breadth-height index being 101·5.

In norma lateralis a prominent feature is the degree of subnasal prognathism which is not brought out by Flower's alveolar index. The glabella and superciliary ridges are slight, the forehead is full and vertical, and the sagittal curve is very uniform, but for a well marked post-bregmatic concavity. The occiput is full but not capsular. The temporal fossæ are well-filled, though the zygomata are slight, and the lineæ temporales very poorly marked. The lower jaw is slender, with a deep sigmoid notch. The most characteristic feature of the face is the slightness of the bones, compared with those of other Bantus. The facial skeleton is most disharmonic, being very chamæprosopic (facial index of Kollmann = 46·9) while the orbits are rounded and megaseme (index 88·1), and the nose very platyrhine (index 66·7). The nasal bones of the concave type are fairly prominent in profile, the apertura pyriformis is broad and low, while its inferior margin rounds off into distinct simian grooves. The malar bones are small but prominent, the maxilla slight, very short from above downwards, with forwardly projecting teeth and deep conspicuous canine and incisive fossæ. The palate is hypsiloid (staphylinic index = 87·2), the teeth small and in fair condition. The chin is pointed and not receding. The skull from Congo is that of a native who died in the Dreadnought Seamen's Hospital. The following remarks are taken from the case book of the donor, Dr. George Budd of Caius College:—"James Martius, age 37, height 5 feet 8 inches, of an extremely powerful figure; face very characteristic of the negro, nose broad, hair short and woolly, eyes large and animated. Teeth filed, owing, he said, to a native superstition that they are thus

protected from slavery. His expression was singularly rich and animated in a degree that is never equalled in any other negro race. He was one of the crew of a Portuguese slaver captured by the Boneta off the west coast of Africa."

In norma verticalis this cranium is oval in outline with prominent parietal eminences and full forehead. It is mesozygous, prognathous (alveolar index 105·5) and dolichocephalic (72·9). The association of prominent parietal eminences with a median sagittal crest gives this cranium in norma occipitalis a pentagonal appearance. The sides are flattened though not so much so as in Kaffirs, the mastoid processes are large and strong, but the conceptaculæ small and inconspicuous. There are wormian bones in the lambdoid suture and at asterion. The sagittal curve passes over a fairly prominent glabella, then rises over a somewhat retreating forehead and slopes gradually upwards to the bregma, where there is an elevation due to a coronal thickening or crest running along the line of the fronto-parietal suture. From the bregma the curve passes back horizontally for the first third of the sagittal suture, and then rounds off to the lambda. The curve if anything is flatter after than before obelion.

The occiput is full and rounded, and the termination of the curve passes horizontally forwards. The percentage distribution among the various components of the curve is as follows :—

Frontal	35·7
Parietal	34·9
Occipital	29·3

The temporal fossæ are large and well-filled, the post zygomatic ridges strong and plain, but the lineæ temporales are not so distinct as in Kaffir crania.

The sutures are simple and open, but there is a fronto-squamosal articulation at the pterion.

The face is flattened and platyopic (nasomalar index 106·5) but at the same time is leptoprosopic.

The forehead is broad, and the external angular processes of the frontal bone are strong and prominent. The orbits are megaseme with thick rounded edges (orbital index 97·5).

The nose, which is not overhung at the root, is broad and not so flattened on the bridge as is the case in many Kaffir crania. The nasal bones are of the straight type.

The side walls and floor of the apertura pyriformis are rounded off. The index is almost leptorhine 48·1. The malar bones are voluminous and prominent. There is considerable alveolar subnasal prognathism, which is increased by the forwardly projecting teeth. The palate is parabolic, and the teeth large and healthy (dental index 45·9). The lower jaw, which is very massive, is characterised by an everted angle, high alveolar arch and strong square chin.

The crania from Loanda differ from one another as regards their altitudinal index, one being tapeinocephalic the other very akrocephalic. They are ellipsoidal

in outline as seen from above, mesozygous and orthognathous, presenting marked occipital dolichocephaly.

In norma occipitalis they are somewhat pentagonal in outline, with very flattened sides and rounded roof; there is a faint median crest. In appearance this norma recalls some of the Angoni skulls from Nyassaland (vide infra). The parietal eminences are but slightly prominent. The sagittal curve runs gradually over a not very conspicuous glabella, is flattened at ophryon, thence passes up to bend sharply about the middle of the frontal bone, proceeding from this point gradually upwards and backwards. The summit of the curve is a short distance behind the bregma. There is an obelial flattening and a very decided occipital or rather occipito-parietal *renflement*, the swelling out occurring in the posterior part of the parietal bone. The supra spinous portion of the occipital squama is vertical. The temporal fossæ are ill filled, there being a deep gutter in the region of pterion; the lineæ temporales are clearly and sharply marked, which correlates well with the strong zygomatic arches and the massive mandible.

The nose is straight and almost continues the profile of the forehead; the whole face is orthognathous, and the teeth are set vertically.

In norma facialis the characteristic features are the flattening produced by the large and prominent malars, the full forehead and the broad square chin. The root of the nose is not sunken and the nasal bones, which are set at an acute angle, stand up as a decided ridge from the flattened nasal processes of the maxillæ. The orbits are microseme, the palate parabolic, and the teeth, which are set vertically in the alveolar arch, are all much worn down.

The skull from Novo Redondo, south of Angola, in most respects resemble the foregoing; it is large and strong, of considerable capacity (1510 c.c.), with large mastoids and very well marked muscular impressions. In norma verticalis this skull presents an ellipsoidal outline, is markedly phænozygous, and slightly prognathous. In norma occipitalis it appears pentagonal with flattened sides and a somewhat rounded roof.

There are many large wormian bones along the whole length of the lambdoid suture. There are no special features of interest about the sagittal curve of which the bregma forms the summit; it might be noted that there is no post-bregmatic concavity, and but slight obelial flattening. There is considerable elongation of the posterior part of the parietal bones, but the occiput itself is vertical and not capsular.

The glabella is prominent and the forehead more receding than in any other South African skull I have examined. There is a large wormian bone at pterion on the left side. The points to which attention should be paid in examining this skull in norma facialis are the concave nose, which is flattened in profile with a good sized aperture rounded off at its lower border into slight simian grooves, the square orbits with thick rounded walls and the prognathous maxilla. The palate is hypsiloid, the teeth are perfect, healthy, and not at all worn down.

The mandible is massive with a very square chin and markedly everted angles. Its most characteristic feature is the shallowness of the sigmoid notch which in appearance recalls the condition normally met with in Bushman crania.

These skulls are similar in most respects to the Ova-herero from Shoshong described and figured by Fritsch.

The sixth skull from the south-west coast is that of a member of the Mondombe tribe, who inhabit the country between Benguela and Mossamedes (Little Fish Bay); it is undoubtedly of the Bush-Hottentot race. Its tapeinocephaly, orthognathism, and general infantile appearance, as well as the presence of a deep supramastoid groove associated with very small mastoid processes, distinguish it from the A-bantu crania, and class it with the more southern aborigines. Any description of a Bushman skull would suit equally well for this, which is of interest mainly as showing the presence in modern times of members of this race, on the west coast, as far north as the twelfth parallel of south latitude.

The chief indices of the Western A-bantu crania are contrasted below.

	Corisco.	Congo.	Loanda (1).	Loanda (2).	Angola.	Mossamedes.
Cephalic	75·9	72·9	68·7	68·1	70·9	73·9
Altitudinal	101·5	100·7	105·9	96·5	107·5	90·2
Alveolar	101	105·5	94·9	97·9	102·9	101·1
Orbital	88·1	97·5	86·8	83·3	84·6	89·5
Nasal	66·7	48·1	50	53·8	54	52
Facial	46·9	52·5	57·6	51·8	54·5	—
Cranial capacity	1225	1400	1670	1565	1510	1235

Eastern Bantus.

These are of considerable interest owing to the almost complete absence of previous descriptions. This group, which is represented by fifty-six skulls, may for purposes of description be arbitrarily subdivided into a southern section, comprising all the tribes around Lake Nyassa and between it and the east coast, and a northern section comprising the tribes of Lake Tanganyika and the countries farther north.

The tribes round Lake Nyassa have recently been completely described by Sir H. H. Johnston,[1] who, from the point of view of linguistic relationships, customs, and traditions, distinguishes ten groups among the Bantu negroes of the eastern half of British Central Africa. Of these groups, four only are considered in this paper, the Ba-tumbuka, Nyanja, the Makua, and the Wayao.

In addition to the foregoing are certain peoples who are in reality not races, but ruling castes, dwelling in the midst of tribes whom their ancestors subdued.

[1] *British Central Africa.*

Such are the Makololo, who have furnished headmen to a few tribes of the lower Shiré; they were brought by Livingstone from the upper Zambesi, but in origin are really Bechuana from the Harrismith district. The Angoni and Magwangwara are the relics of the former Zulu invaders of the country. According to the authorities quoted by Johnston, a horde of Zulus early in the century trekked northwards to avoid the tyranny of Chaka; crossing the Zambesi at Zumbo they formed a Zulu kingdom in Fipa country, south-east of Lake Tanganyika. Thence some, under the name of Watuta, reached as far north as the Victoria Nyanza, while others working eastwards became the dominant caste among the Wahehe and Wanzindo. After the disruption of the Zulu kingdom in Fipa country the bands formed the present Angoni and Magwangwara.

The various series are considered in order below.

Angoni.

There is in the British Museum a collection of twenty-five Angoni skulls sent home from British Central Africa by the late Commissioner, Sir H. H. Johnston; the following extract from a letter of the donor explains the circumstances under which they were procured.

"The skulls that I sent you were obtained by me in M'ponda's town, at the south end of Lake Nyassa. I was given to understand that they were the skulls of Angoni hostages, who had been slaughtered by M'ponda. The heads were taken by me off the stakes of M'ponda's stockade. If, as I imagine, they are the heads of Angoni, they would be the heads of a slightly mixed negro race mainly belonging to the Anyanja stock with a slight Zulu intermixture. It is possible, however, that one or more of them may be Yaos mixed with Arab blood."

Of the twenty-five Angoni skulls from Nyassa-land, sixteen form a very uniform series, two or three closely resemble Koranna Hottentots, while the remainder though intermediate in character may best be described as showing considerable variations among themselves and differing to a greater or less extent from the preceding.

Viewed in norma verticalis, skulls of the chief series appear oval in outline, occipitally elongated with prominent frontal but only moderate parietal eminences, cryptozygous, and alveolarly prognathous.

The sutures are usually simple but in the younger skulls somewhat foliated; intermediate conditions such as No. 4 on Broca's scale are not met with.

Viewed in norma occipitalis, the crania are pentagonal, with fairly well marked sagittal ridge and flattened sides. The conceptaculæ cerebelli are full, but the mastoid processes are not prominent. In all there is a pronounced obelial flattening which is more noticeable in profile. The height of these skulls exceeds their breadth.

In norma lateralis the crania of this series present the features of dolicho-hypsistenocephaly associated with a leptoprosopic alveolarly prognathous face. The glabella and superciliary ridges are moderately prominent, the forehead full

with well marked eminences, and the occiput capsular, in many cases indeed there is a distinct *renflement.* The sagittal curve in some crania passes backwards uniformly and uninterruptedly while in others there is a post-bregmatic concavity varying considerably in extent and distinctness; in all there is a marked flattening in the neighbourhood of obelion. The temporal fossæ, which are very much flattened, are bounded by very distinct lineæ temporales continuous into a strong post-zygomatic ridge. The mastoids are of only moderate dimensions, and there is no well-marked supra-mastoid groove such as is found in Hottentot and Bushmen crania. The zygomatic arches are very strong and prominent and the styloid processes very large. The nose is rather conspicuous in profile compared with the previously described black races.

Pterion is variable, both parieto-sphenoid and fronto-squamous articulations being met with, but the process of the great wing of the sphenoid is always very narrow.

Wormian bones are fairly common in this series of crania.

In norma facialis the strong well-marked face is characterised by the prominence of the glabella and superciliary ridges and by the breadth and fulness of the forehead. The median sagittal ridge is very noticeable in this norma. In all these skulls there is a decided alveolar prognatism, and the anterior border of the maxilla is channelled by the sockets of the teeth, which are set obliquely with a forward projection. The malars are voluminous and prominent, but do not project forwards to give the face quite the flattened appearance of the Hottentots. The high and rounded orbits have usually megaseme indices, the nose is platyrhine, while the palate in all cases is parabolic or hypsiloid.

There is a considerable range of variation in the size and shape of the nasal bones, which at the one extreme are long and broad, very broad at nasion and widening but little below, in which case the nasal processes of the maxillæ are also broad and somewhat flattened, while at the other extreme the bones are shorter and narrower especially at the root of the nose, the apertura pyriformis being higher than in the other type. Between these extremes there are all shades of variation. The lower border of the apertura pyriformis is usually rounded off, though in some cases it presents an appearance closely approximating to simian grooves.

The nasal spine is not pronounced. The teeth are frequently much worn down. From a review of their physical characters it would seem that this series of crania consists entirely of males, a supposition confirmed by inquiry into the conditions under which they were found, the skull trophies of African chiefs being derived for the most part from the male population of the village or villages destroyed. In this case the skulls are said to have been those of hostages, who would certainly have been males and probably chiefs or persons of some rank and position in the tribe. Many of the skulls appear to have been struck with some sharp instrument which has destroyed the zygomatic arch, and frequently the orbit on one side.

Another group of Angoni skulls present many points of resemblance to those of Hottentots especially to the Koranna; the leading features being the small size of the glabella, the concave parietal portion of the sagittal curve, the slight obelial flattening and the occipital *renflement.* They are also characterised by deep supra-mastoid grooves, associated with small mastoid processes and a swelling out of the cranium at the level of the squamous suture into the ill-filled temporal fossa, with many wormian bones along the line of that suture. They possess a face markedly flattened by massive projecting malars and with deep depressions over the external angular processes of the frontal bone. The skulls rest on the condyles, both the mastoid processes and the conceptaculæ cerebelli being small and inconspicuous.

It is however, evident, from their greater height, that these crania are not those of pure blooded Hottentots extending far to the north of the Zambesi valley.

Sir H. H. Johnston[1] says of these people, "Many of the Anyanza are light tinted, but it is a dirty yellow, which suggests ancient Bushman-Hottentot intermixture, and is associated with a low type of face and a squat body." The remaining Angoni crania are too much injured to admit of detailed examination, but they appear to present characters intermediate between the preceding groups.

Manganja.

There are in the museum of the Royal College of Surgeons six skulls belonging to this people of the Nyanza stock, who occupy the valley and the highlands of the Shiré and lower Zambesi. They were brought to England by Dr. John Kirk, who accompanied Livingstone's second expedition. The skulls are slight and of small capacity (1230 c.c.). In outline they are a long frontally elongated oval, with a full forehead and prominent parietal eminences; they are phænozygous and slightly prognathous.

As seen in norma occipitalis the roof appears rounded, and the sides are much flattened. The mastoids and conceptaculæ cerebelli are slight, the occiput is full and the sagittal suture lies in a groove near obelion. The zygomatic arches are slender, there is a well marked post-zygomatic ridge but no supra-mastoid groove. The sigmoid notch of the mandible is very shallow, closely approximating to the condition in Bushmen. The chief facial characters are the narrow, very full and vertical forehead, the almost complete absence of the glabella and superciliary ridges, the depth of the infra-orbital fossæ and the extreme alveolar subnasal prognathism. The face is broadest across the malar bones, and therefore presents a somewhat lozenge-shaped outline. The nose is broad and flat, the breadth being largely contributed by the nasal processes of the maxillæ. The nasal bones are of the straight variety previously described. The upper incisor teeth are deeply notched in the form of a v, but the canines have not been mutilated. Sir William Turner, in a monograph on the Manganja, describes the face as a whole as slight, finely chiselled, and hardly presenting the coarse features characteristic of

[1] *British Central Africa*, p. 394.

many negro tribes. This scarcely agrees with the appearance of the crania in the College of Surgeons Museum, or with the descriptions given by residents in British Central Africa.

Wa-henga.

Two skulls[1] belonging to natives of this race, killed in a war with the Arab slave dealers, were sent home in 1891 by Sir H. H. Johnston. The Wa-henga, who belong to the Ba-tum-buka stock, inhabit the north-western shores of Lake Nyassa and the neighbouring country as far as the valley of the upper Luangwa river; they are considered to be to some extent a mongrel race, formed by the mingling of refugees from many tribes. The skulls in question are said to have been those of natives of about twenty-three years of age, an estimate which is confirmed by their osteological and dental characters.

The skulls, which are of fair capacity (1475 c.c. and 1330 c.c. respectively), are in outline an occipitally elongated oval with prominent frontal and slight parietal eminences; they are cryptozygous and very prognathous. The sutures, as in most negro crania, are extremely simple.

In norma occipitalis they appear pentagonal, there being a slight sagittal crest, while the sides and bases are much flattened. The mastoids are small and inconspicuous.

In one skull (No. 91. 5. 9. 1) there are two moderate sized wormian bones in the lambdoid suture.

As seen in norma lateralis the glabella is but slightly developed, but the superciliary ridges are better marked; the forehead is full and the sagittal curve presents both a post-bregmatic concavity and an obelial flattening. The occiput is prominent, full and rounded, but there is no distinct *renflement*. The temporal squama and the floor of the fossa above it are very much flattened, and there is a slight gutter at pterion which is of the normal H shape.

The zygomata are strong, and the lineæ temporales and post-zygomatic ridge very distinct. The face is short and eurygnathous, the malars very prominent, and the nose has a very squat appearance, the nasal processes of the maxillæ especially contributing to the width of the bridge. The apertura pyriformis is of good height, its lower border is rounded off, but there are no prenasal fossæ or simian grooves. The megaseme and widely separated orbits are deep and have large lachrymal canals. The forehead is full and broad, with a slight median ridge at the line of fusion of the frontal eminences of either side. The palate is parabolic and the teeth rather small and considerably worn down. The mandible is less massive than among the Kaffirs, the chin is pointed and receding, although the alveolar arch is very square.

The Wa-yao.

These occupy the south-eastern shores of Lake Nyassa, the banks of the Ruvuma and Lujenda rivers and the high plateaux between these streams and the

[1] Now in the British Museum.

Mozambique coast. They are hemmed in on the north by the Makua peoples, and on the south by the Magwangwara, a tribe of Zulu mongrels. The skulls[1] of this race described below were brought by Sir Richard Burton from Quiloa. They are much more massive than the preceding, and may be distinguished from them in norma verticalis by their more ellipsoidal outline, broader forehead and greater occipital elongation, the parietal eminences not being placed so far back as in the Manganja. In norma occipitalis the crania, which are broader and possess more rounded sides, show some signs of a keel along the sagittal suture. The mastoid processes and the conceptaculæ cerebelli are small and inconspicuous. As seen in profile the face and nose appear less flattened and less hidden by the malars than is the case among the more southerly tribes; there is also much less sub-nasal prognathism. The temporal fossæ are better filled, and their boundaries more clearly defined than in the skulls from the Shiré valley. The sagittal curve presents distinct bregmatic and obelial flattenings.

The face appears broadest at the level of the external angular processes of the frontal bone, narrowing off below. The glabella and superciliary ridges are very indistinct, the orbits rounded and megaseme; the nose borders on mesorhine in the male, but is distinctly platyrhine in the female skulls. A characteristic feature is that the nose is more leptorhine, and the face more prosopic than in the foregoing tribes. The palate is parabolic, the teeth small and frequently imperfect. In spite of the long Arab domination and consequent conversion to Islamism, there is no more evidence of Arab intermixture than in any other tribe of Central Africa.[2]

The following tables comparing the percentage distribution of the various cranial and facial indices in the group under consideration, show that in all respects the Angoni are intermediate between the Zulus and the natives of the lake district, although as indicated by the tables of seriations, in all the Bantu peoples the individual are greater than the tribal variations.

CEPHALIC INDEX.

	Zulu.	Angoni.	Anyanja, Wa-henga, Wa-yao.
Dolichocephalic	70	76	82·5
Sub-dolichocephalic	20	8	7·5
Mesaticephalic	5	12	7·5
Sub-brachycephalic	5	4	2·5

[1] Now in the Museum of the Royal College of Surgeons.

[2] Since the above was written a fresh skull of a member of the Kawaiga section of this race has been presented to the museum of the Royal College of Surgeons. The original owner was killed at Chikala in the Shiré highlands. The chief indices are: Capacity, 1470 c.c.; L.B. i, 71·9; L.H. i, 70·8; Alv. i, 99; Nas. i, 50; Orb. i, 82·5.

BREADTH-HEIGHT INDEX.

	Zulu.	Angoni.	Anyanja, Wa-henga, Wa-yao.
Tapeinocephalic	—	—	—
Metriocephalic	15·8	20·8	25·6
Akrocephalic	84·2	79·2	74·4

ALVEOLAR INDEX.

	Zulu.	Angoni.	Anyanja, Wa-henga, Wa-yao.
Orthognathic	20	16	17·9
Mesognathic	50	56	51·3
Prognathic	30	28	30·8

It is not easy to explain the greater orthognathism of the Angoni, all the components of the intermixture being apparently more prognathous.

UPPER FACIAL (KOLLMANN).

	Zulu.	Angoni.	Anyanja, Wa-henga, Wa-yao.
Chamæprosopic	14·3	16·7	17·6
Leptoprosopic	85·7	83·3	82·4

ORBITAL INDEX.

	Zulu.	Angoni.	Anyanja, Wa-henga, Wa-yao.
Microseme	45·5	19	9·8
Mesoseme	27·3	33·3	39
Megaseme	27·3	47·6	51·2

This index is thus seen to increase from south to north.

NASAL INDEX.

	Zulu.	Angoni.	Anyanja, Wa-henga, Wa-yao.
Platyrhine	76·2	84	80
Mesorhine	19	16	20
Leptorhine	4·8	—	—

NASO-MALAR INDEX.[1]

	Zulu.	Angoni.	Anyanja, Wa-henga, Wa-yao.
Platyopic	55	57·9	51·5
Mesopic	25	31·6	39·4
Prosopic	20	10·5	9·1

The last two indices suggest strongly Bushman-Hottentot intermixture in the Angoni.

In the succeeding table the average indices of the tribes in this section are compared, and an attempt has been made to dissect out the Anyanja and Zulu elements in the Angoni.

TABLE of comparisons between indices of Angonis and other races.

	All Angoni.	Uniform group ? Anyanja.	Supposed Zulu Kaffir element in Angoni.	Zulu.	Manganja.	Wa-yao.
Length-breadth	73·1	72	74·6	74·8	71·8	72
Length-height	74·2	72·9	76·2	75	72·8	70·2
Breadth-height	102·1	101·7	102·7	102	101·4	97·4
Upper facial (Kollmann)	56·6	52	59	52·9	51·1	53·2
Upper facial (Broca)	75·3	70·8	77·6	70·7	68·6	73
Total facial (Kollmann)	—	—	—	91·1	86·2	—
Maxillary facial	74·1	72·7	76·6	72·2	66·3	74·2
Orbital	87·8	88·3	87·1	84·6	90·2	88·9
Nasal	58	57·3	59·1	58·5	55·1	53·9
Palatal (staphylinic)	68·9	68·6	69·3	72·9	67·9	71·9
Palatal (uranic)	111·2	111	111·5	116·9	108·1	112·2
Alveolar	100·9	100·9	101	100·1	101·5	102

[1] The naso-malar index of Mr. Oldfield Thomas is the numerical expression of $\frac{\text{Internal Biorbital breadth as taken by the tape (\textit{i.e.}, the arc)} \times 100}{\text{Internal Biorbital breadth as taken by the callipers (\textit{i.e.}, the chord)}}$.

TABLE of indices—*continued.*

	All Angoni.	Uniform group Anyanja.	Supposed Zulu Kaffir element in Angoni.	Zulu.	Manganja.	Wa-yao.
Dental	42·5	42·3	42·6	43·4	42	40·9
Naso-malar	107·1	106·6	107·8	107·7	107·3	108·7
Fronto-zygomatic	90·8	90·5	91·1	89·8	89	88
Stephanio-zygomatic	88·5	87·9	89·2	87·1	85·9	85·4
Relation of diameters:—						
Minimum frontal breadth .... to maximum breadth	73·3	73·7	72·9	73·7	72·2	73·7
Bi-stephanic breadth .... to maximum breadth	85·1	84·8	85·5	84	83·6	81·5
Inter-pterion breadth ... to maximum breadth	80·7	81	80·3	78·6	79·1	79·3
Bi-asteric breadth ... to maximum breadth	79	79·1	78·8	78·6	81	82·4
Sub-cerebral to total frontal	20·3	20·5	20·2	18·4	17·5	20·7
Frontal to total sagittal	35·3	35	35·6	35·4	35	34·9
Parietal to total sagittal	35·1	35·1	34·9	34·4	35·2	35
Occipital to total sagittal	29·5	29·8	29·3	30·2	29·8	30·1
Pre-auricular to total horizontal .. .	47·7	47·7	47·7	46·4	46	44·9
Supra-auricular to total transverse	69	69·1	68·8	67·1	68·3	67

Of the tribes which compose the northern section of Eastern Bantus, no classification physical or linguistic has been or can as yet be made, so the four crania coming from this district are described separately.

Warega.

Two skulls[1] of this tribe were brought to England by Stanley from Kampunzu's village, between Tanganyika and the Upper Congo. These skulls were submitted to Professor Huxley, who passed the following judgment upon them: "Of the two skulls, the one is that of a man probably somewhat under thirty years of age and the other that of a woman over fifty. The man's skull exhibits all the characteristic peculiarities of the negro type. In the female skull the only point worth notice is a somewhat unusual breadth of the anterior nasal aperture in proportion to its height, indicating that the nostrils may have been slightly farther apart and the extremity of the nose a little flatter than usual."[2]

The crania though small are not at all unlike those from Lake Nyassa.

In norma verticalis they appear oval in outline with full foreheads and prominent parietal eminences. They are orthognathous and mesozygous. The cephalic index of the male skull is 74·2 and of the female 75·9.

The sutures are all open and simple.

In norma occipitalis the outline is pentagonal with flattened side walls and a somewhat rounded roof. The mastoid processes are strong in the male and moderate in the female skull.

The sagittal curve closely resembles that of the other Central African

[1] Now in the British Museum.

[2] H. M. Stanley. *Through the Dark Continent*, p. 418.

Bantus, the glabella is prominent, and there are pronounced bregmatic and obelial flattenings.

The occiput is full and rounded but presents no distinct *renflement*. There is a wormian bone at lambda in the male skull. The temporal fossa as a whole is ill-filled, and exhibits a distinct gutter in the region of pterion. The face is broad and platyopic—the facial index in the male being 51·9, and in the female 45·9. In the female the malars are slight, but in the male they are prominent and voluminous. The orbits are mesoseme with thick rounded edges and the nose short and rather depressed. There is some sub-nasal prognathism and the incisive and canine fossæ are deeply cut. The palate of the male is parabolic, and the teeth small but in good condition. Few measurements could be taken owing to the severe injuries these crania have sustained.

Makua from Zanzibar.

A small weak skull,[1] apparently that of a young female. In shape it is an elongated oval, slightly prognathous and cryptozygous. The forehead is full and vertical, and there are some indications of a *renflement* in the occipital region. The mastoids are slender, while all muscular ridges and impressions are very poorly marked. The orbits are megaseme, the nose flattened, the malars small and not at all protruding. There is some alveolar prognathism and the maxilla is deeply channelled into fossæ by the fangs of the incisor and canine teeth, which must have projected considerably forwards. On account of its sex and age this skull is probably quite useless as a type; it has, however, been figured in the *Journal of the Anthropological Institute* for 1897, Plate XXXI.

M-kambo.

The skull[2] of a native of the country east of Tsavo in British Imperial East Africa was brought home by Dr. Gregory after his expedition to the great rift valley. This skull differs in some respects from those previously described; it is ellipsoidal, mesozygous, and orthognathous. The forehead is full, the glabella not at all prominent, and the superciliary ridges far from pronounced; the nose in profile appears to be a direct continuation of the curve of the forehead. The sagittal curve runs uniformly back to the lambda, whence it passes over a full capsular occiput. The conceptaculæ cerebelli are so far developed that the skull rests on them posteriorly rather than on the mastoid processes or the occipital condyles. Owing to post mortem injuries the various components of the sagittal curve could not be measured. There is a large rhomb-shaped "os epactal" and a pair of other wormian bones on either side in the lambdoid suture, which is somewhat complicated. The other cranial sutures are synostosed. The temples are full, the zygomata strong and the lineæ temporales well defined.

The orbits are microseme, the nose platyrhine and somewhat flattened, the lower margin of the apertura pyriformis fades gradually into distinct simian grooves. The malar bones tend considerably to flatten the face. The palate is

[1] In the Anatomical Museum, Cambridge.

[2] Now in the British Museum.

elliptical, the teeth small and in some cases carious. The mandible is slight, the angle somewhat everted, the sigmoid notch shallow, and the chin pointed.

The appended table compares the chief indices of the M-kambo skull with those of certain male crania from neighbouring Bantu-speaking tribes described by Virchow[1]:—

	M-kambo.	Wanyamwesi.	Urega.	M-hehe.
Length-breadth	71·7	70·3	80·1	74·3
Length-height	71·7	69·3	72·7	76
Orbital	82·9	90	86·8	82·5
Nasal	54·9	53	56·5	60
Staphylinic	70	66	—	80
Cranial capacity	—	1370	—	1055

Northern Bantus.

This group is represented by two skulls from Banzyville,[2] on the Upper Mobangi (which shortly above that point is known as the Welle) and another from the Upper Congo.[3]

The crania are very probably those of Bayansi. Sir H. H. Johnston[4] describes the Upper Congo people as betraying little or no "negro" blood. "They are pure 'Bantu' and consequently greatly resemble other unmixed races of the same stock, such as the people of Tanganyika and Nyassa. They differ from the more negroid Bakongo in having chocolate-coloured skins and an abundant growth of hair. In the Bateke the brow is often prominent and the frontal ridge very slightly marked. The nose is generally flattened and is always very broad at the nostrils; occasionally, however, one meets with an individual of this tribe possessing a high bridged and somewhat hooked nose. The chin varies greatly in individuals, but there is a great predominance of strong firm ones over those of a weak receding type." Of the three skulls from Ubangi, one, the most feminine in appearance, is known to be that of a male, thus affording another proof of the impossibility of accurately determining the sex of a skull belonging to any of the negro races. The other two are probably also male.

The crania are small, the capacity of the only one sufficiently uninjured to permit of cubing being 1285 c.c.

Viewed in norma verticalis the skulls are ellipsoidal in outline with full foreheads and parietal eminences. They are prognathous and cryptozygous, although in one skull the zygomatic arches are just visible in this norma.

The sutures are open, but rather more complicated than in other Bantu crania.

The mean cephalic index is 73·4.

[1] Neue Anthropologische Beobachtungen aus Ost, Süd und Süd west Afrika. (*Verhandlungen der Berliner Gesellschaft für Anthropologie*), 1895.

[2] Now in the Anatomical Museum, Cambridge.

[3] Now in the Museum of the Royal College of Surgeons.

[4] *The River Congo.*

Comparing with indices of neighbouring tribes as given by Dr. Mense[1]:—

Bangala	72·5
Nghiri	74
Ibenga	75·9
Muyanzi	77·8

The mean gnathic index of Mobangi skulls is 104·6 as compared with the 104·8 of the Bangala.

In norma occipitalis the lower part of the cranium presents a very square appearance with prominent mastoids and moderately full conceptaculæ cerebelli. The roof is rounded off as a broad surbased arch. The mean altitudinal breadth-height index is 99·9.

The sagittal curve rises from nasion over a very slightly marked glabella and a vertical forehead to its summit in the posterior fourth of the frontal bone. Thence it passes horizontally backwards to the mid-parietal region, whence it winds round to the lambda. The occiput is full but not capsular.

The temporal fossæ are rather short but clearly marked off by lineæ temporales and well-filled out, except in No. 1749, which exhibits a deep gutter-like depression at pterion.

The mastoids are prominent, the zygomata thick and strong, and the post-zygomatic ridge well marked.

The upper part of the face is almost hidden by the large and projecting malars, but the alveolar prognathism of the maxilla makes itself evident below.

The face is leptoprosopic and platyopic; it is characterised by a narrow but bombé forehead, megaseme orbits, platyrhine nose and prognathous maxilla.

The nose is broad, transversely flattened at the bridge, but not sunken at the root; both straight and concave types of nasal bones are met with. The inferior margin of the apertura pyriformis rounds off into slight simian grooves. The average nasal index is 56·5 as compared with

Bangala	58·6
Muyanzi	60·8
Ibenga	61·3

The increased platyrhiny observed in the latter being possibly due to admixture of northern negro blood.

The orbits are rectangular, with thick rounded margins, the average index being 90·4.

Bangala	84·3
Muyanzi	90·4
Nghiri	84
Ibenga	74·4

[1] ANTHROPOLOGIE DER VÖLKER VOM MITTLEREM CONGO (*Verhandlungen der Berliner Gesellschaft für Anthropologie, &c.*, 1887).

The maxillæ, which are sub-nasally prognathous, present deeply channelled incisive, canine and infra-orbital fossæ.

The palate is parabolic in two and elliptical in one (No. 1749), the mean staphylinic index is 68·4 as contrasted with

Bangala	...	...	...	...	...	71·7
Muyanzi	...	...	...	...	...	75·4
Nghiri ...	...	..	...	...	...	66
Ibenga ...	...	...	...	...	...	80

These skulls in many respects resemble those of Ashantis, while one (No. 1749) has been figured and shown by Duckworth[1] to present a likeness almost amounting to an identity with a Betsimaraka in the Anatomical Museum at Cambridge.

Reviewing the craniometry and craniology of the whole A-bantu peoples the first and most striking feature is the uniformity of skulls from all quarters of the area under consideration. Such differences as exist are more readily detected by inspection than by a study of the tables of seriation, in which distinct foci of regression are conspicuous by their absence. The difficult question to solve is, which of the numerous groups represent the true unmixed "Bantus"? this is largely a matter for philologists, but for the moment considering cranial evidence only, the natural divisions seem to me to be as follows. A central series stretching from Lake Albert Edward Nyanza to the Limpopo river, represented by skulls from the Warega, Wahenga, Anyanja, Wayao and Bechuana tribes present practically identical features. On one side of this the Western Bantus, represented by skulls from Congo, Loanda and Benguela are very similar in their cranial and facial traits. South of Vaal the Basuto and Kaffir skulls are more infantile and seem to show intermixture with the Bushman-Hottentot race, which still survives in the south-western corner of the African continent. Such intermixture is indicated by the diminished height, capacity, and prognathism of the skull.

To the east, the type is modified and softened down, the crania becoming more leptorhine, leptoprosopic and microseme, while the cephalic index is slightly raised. The problem then arises, are the differences due to crossing with the Arabs or other Semito-Hamitic peoples?

We know that the latter race has for a long time more or less effectively occupied the eastern seaboard, and may have colonised it at a period anterior to the advent of the A-bantu.

Such intermixture, however, although historically, ethnically and even osteologically probable, cannot be distinctly proved, and no skulls from South-Eastern Africa, of unmistakably Semitic affinities, have as yet been described.

To the north-west, some crania from the Upper Congo and the Mobangi are almost identical with those from the lake district, while others are more negroid, so that in the forest zone north of the Congo "true negro" and "Bantu" come in contact.

[1] "An account of skulls from Madagascar," *Journal Anthropological Institute*, 1897.

The next question is, what tribes of the Sudan, the country of linguistic "potpourri," do the A-bantu resemble? Not, or at least, not at all closely, those of the Western littoral as represented by Ashanti or Dahomans. Probably not the tribes of the Niger or Benue, but this is uncertain, as no skulls from the country between the former river and Lake Chad have as yet been figured or described. The obvious affinities are with the Monbottu of Niam-Niam, and the peoples of the Zeriba country, and the Welle-Nile divide. The resemblances, I had almost said identities, are clearly shown by the appended photographs of a skull in the Museum of the Royal College of Surgeons.[1] Up to the present, absence of material prevents a comparison of the A-bantu with the Massai and with the Dinka Shilluk and other Nilotic negroes. Turning to the evidence from history and philology we may now inquire how far it agrees with the foregoing conclusions. History or tradition prior to the fifteenth century there is none, and for three hundred years later, in all that concerns native affairs, the records are most unreliable. The Portuguese explorers found powerful native kingdoms along the west coast, the most important being that of Congo. This empire was at the end of the fifteenth century, according to the narrative of Andrew Battel,[2] invaded and devastated by a ruthless horde known as the "Jagas" under a chief named Zimbo. Bands under his various lieutenants are said to have penetrated to the Zambesi on the one hand and to the border of Abyssinia on the other. A little later Santos[2] describes the Portuguese colonies on the east coast as being attacked by a people designated the Muzimbas (Mu-Zimbo), who were finally defeated at Melinda. These after their defeat devastated the country as far south as Natal and then turned up the west coast to Benguela. In the seventeenth century other and similar raids extending over a large area are believed to have been made.

Even in the present century, the Zulus under Chaka laid waste a large part of South Africa, while armies under his different officers having rebelled against his tyrannic discipline and consequently fleeing northwards to escape his revenge ravaged the country as far as the Victoria Nyanza.

The whole history is therefore one of racial movement and ethnic intermixture. From archæology we learn the former northward extension of the Bushmen-Hottentots now found only in Damara and Namaqua-land and the confines of Cape Colony, unless the scattered tribes, such as the Wassandawi[3] of Lake Manyara and the Doko of Laikipia[4], [5] are to be taken as connecting links between them, the Batwa, Akka, and other dwarf tribes of the central forests.

From it we also learn the early date of the Semitic colonies, as evinced by the ruined fortress of Zimbabwe and the deserted gold workings scattered throughout Mashonaland. None of the foregoing evidence has been definite or explicit; when we turn to philology it is far otherwise.

[1] v. Plate V, Fig. 1.
[2] In Pinkerton's *Collected travels.*
[3] Baumann. *Durch Massai-Land zur Nilquelle*, Berlin, 1894.
[4] Gregory. *The great Rift Valley.*
[5] Stuhlmann. *Mit Emin Pasha.*

Sir H. H. Johnston[1] has traced out a probable course of the Bantu invaders from a hypothetical cradle of the race somewhere "about the very centre of the continent in some forest district midway between the watersheds of the Nile, Lake Chad, the Benue and the Congo. The invaders skirted the northern limit of the Congo basin, traversing the Albert Nyanza, and from thence rapidly spreading over South-Eastern Africa. The main body pressed steadily southwards, sending off from time to time important branches to the west and east." He concludes that the most archaic Bantu tongues still exist along the line of route—Kirega, Kiemba, Cibesa, Isizulu,—which is thus seen to coincide with the distribution of the central group of A-bantu according to the craniological classification. As to the location of the cradle of the race, far to the west of the Nile Valley, there is no evidence for craniologists to weigh; but the later course mapped out by the philologist is in entire agreement with deductions made from a study of skull conformation.

Key to table of Museums.

N. = Museum of the Army Medical School at Netley.
C. = Anatomical Museum, Cambridge.
R.C.S. = Museum of the Royal College of Surgeons.
B.D. = Barnard Davis' collection.
B.M. = British Museum.
B. = Vesalianum, Basle.

Key to table of Kaffir skulls.

Skulls of certain origin.

Amampondo.

C. 1733.
C. 1735.
R.C.S. 1286

Amaxosa.

R.C.S. 1291.
R.C.S. 1293 A.
R.C.S. 1293 B.
R.C.S. 1293 C.
R.C.S. 1294 D.
B.M. 87.2.12.1.
C. 1736.
C. 1737.
N. 398.
N. App. 43.
N. App. 44.

Abatembu.

N. 393.
N. 393*.
N. 394.
N. 395.
N. 396.
N. 397.

Bechuana.

R.C.S. 1292.
R.C.S. 1294 E.
R.C.S. 1295.
C. 1734.

Explanation of Plate V.

Skulls in the museum of the Royal College of Surgeons, reproduced by the kind permission of the Council of the College. The author is deeply indebted to Dr. Garson for the photographs.

i. Akossi tribe of the Monbottu.
ii. W-a-Yao from Quiloa (brought down as a slave from the interior).
iii. Anyanja from the Shiré Valley.

[1] *British Central Africa*, Chap. xi.

TABLE OF AVERAGE INDICES OF THE SKULLS OF THE VARIOUS SUB-DIVISIONS OF THE A-BANTU PEOPLES.

Race.	All Kaffirs.	Ama-xosa.	Ama-tembu.	Ama-pondo.	Ama-zulu.	Mantati Basuto.	West Coast Kaffirs.	Mozam-biques.	Makua.	Angoni.	Man-ganja.	Wahiou (Yao).	Wahenga.	Urega.	M'Kambo.	Upper Congo Mobangi.
Length-breadth	72·5	72·4	70·6	69·1	74·8	76·9	70·1	72·2	74·1	73·1	71·8	72	69·2	75	71·7	73·4
Length-height	72·5	72·8	71·8	70·1	75	73·2	72	69·7	67·1	74·2	72·8	70·2	71·2	—	71·7	73·3
Breadth-height	100·1	100·6	101·7	101·5	102	95·1	102·6	96·7	90·5	102·1	101·4	97·4	102·9	—	100	99·9
Upper facial (Kollmann) ...	51·8	51·8	52·3	54·8	52·9	50·4	54·1	53	49·6	56·6	51·1	53·2	54 4	48·7	50·4	52·9
Upper facial (Broca)....	69·9	72	70·3	71·8	70·7	69	73	72·1	66·4	75·3	68·6	73	74·4	69·6	71	71·9
Total facial (Kollmann)	87	91·5	86·4	94·4	91·1	89·5	91·5	88·8	—	—	86·2	—	90·5	—	87	80·6
Total facial (Broca)	105·6	110	104·7	112·1	110·4	108·1	110	108·6	—	—	102·4	—	110·1	—	107·6	102·2
Maxillary facial	72·2	76·5	75·1	79·1	72·2	70·7	73·6	71·5	65·1	74·1	66·3	74·2	74·1	64	69·5	68·6
Orbital	86·2	85·3	83·9	75	84·6	85·4	88	91	91·6	87·8	90·2	88·9	93·2	85·5	82·9	90·4
Nasal	57·2	57·8	57	66·7	58·5	51·4	51·5	56·8	61	58	55·1	53·9	54·7	59·9	54·9	56·6
Palatal (staphylinic)..	71·6	69·5	71·8	71·4	72·9	65	71·4	66·7	54·7	68·9	67·9	71·9	62·7	72·7	70	68·4
Palatal (uranic)	112·2	110	109·7	104·8	116·9	115·3	111·8	107·5	94·3	111·2	108·1	112·2	109·9	119·3	110·5	107·4
Alveolar	100·4	100·9	99·6	106	100·1	98·1	100·3	103·8	107	100·9	101·5	102	100	—	100	104·6
Dental....	40·8	42·5	40·1	44·5	43·4	45·1	41	45·4	—	42·5	42	40·9	41·3	—	—	—
Naso-malar	108·1	109	108	106·7	107·7	105·9	107·3	109	108·9	107·1	107·3	108·7	108·9	106·1	107·7	106·8
Fronto-zygomatic	88·5	92·6	84·8	98·4	89·8	89·2	87·7	92·1	95·6	90·8	89	88	88·3	89·6	87·8	88·4
Stephanio-zygomatic....	—	85·3	79·1	97·6	87·1	86·6	83·9	—	96	—	85·9	—	79	89·6	82·4	85·8
Relations of diameters—																
Minimum frontal breadth–maximum breadth	72·5	74·2	73·5	79·1	73·7	72	74·9	71·3	69·8	73·3	72·2	73·7	72	72·4	78·8	70·8
Bi-stephanic breadth–maximum breadth ...	80·4	80·6	80·1	90·3	84	82·3	82·7	82·5	86·1	85·1	83·6	81·5	78·1	85·8	81·8	84·1
Pterion breadth–maximum breadth	79·7	80·4	81·3	85·8	78·6	77·8	81·7	80·8	79·4	80·7	79·1	79·3	82·3	77·1	81·1	80·1
Asterion breadth–maximum breadth	80·9	80·5	82·2	85·1	78·6	75·4	83·6	83·7	80·2	79	81	82·4	83·5	81·4	91·7	79·5
Relations of curves—																
Sub-cerebral–total frontal	19·5	22	19·5	16·4	18·4	18·3	19·8	20	16·3	20·3	17·5	20·7	19·8	—	—	20·6
Frontal–total sagittal ...	34·7	33·3	34·7	35	35·4	36·6	33·7	34·7	36	35·3	35	34·9	35·2	—	—	35·9
Parietal–total sagittal ...	34	35·4	34·1	35·2	34·4	33·1	34·1	35·2	34·5	35·1	35·2	35	34·6	—	—	34·3
Occipital–total sagittal ...	31·3	31·3	31·2	29·7	30·2	30·3	32·1	30·2	29·5	29·5	29·8	30·1	30·3	—	—	29·8
Pre-auricular–total horizontal	47·3	47·9	48	49·8	46·4	48·6	46·8	46	44·6	47·7	46	44·9	46·7	47·4	48·2	45
Supra-auricular–total transverse	68·1	69·4	67·1	70	67·1	67·3	67·7	68·1	69·3	69	68·3	67	67·6	70	66·5	68·2

TABLE OF SERIATIONS.

LENGTH-BREADTH INDEX.

	Kaffirs.	Zulus.	Angonis.	Eastern Bantus.	Fernand Vaz.	Ashantis.	Ancient Egyptians.
65	—	—	—	—	—	—	1
66	—	—	—	—	—	—	—
67	3	—	2	3	—	1	—
68	4	—	—	1	—	4	2
69	3	1	1	3	3	4	5
70	3	1	4	6	9	7	5
71	9	2	5	8	5	5	13
72	6	3	1	4	6	7	13
73	6	2	1	4	11	12	21
74	6	4	3	9	14	11	19
75	4	1	2	4	17	7	33
76	5		—	2	15	3	28
77	2	2	2	2	16	1	19
78	4	2	1	1	12	3	16
79	—	—	2	2	10	—	16
80	—	—	1	1	6	—	6
81	—	1	—	—	4	—	5
82	—	—	—	—	3	—	2
83	—	—	—	—	2	—	1
84	—	—	—	—	—	—	1
85	—	—	—	—	2	—	—

TABLE OF SERIATIONS.

LENGTH-HEIGHT INDEX.

	Kaffirs.	Zulus.	Angonis.	Eastern Bantus.	Ashantis.	Ancient Egyptians.
66	1	—	—	—	—	2
67	2	—	—	1	1	5
68	2	—	—	—	1	5
69	2	1	1	6	3	11
70	4	—	1	4	2	12
71	9	1	4	6	4	27
72	10	3	1	5	6	24
73	9	4	5	9	5	28
74	2	—	2	4	13	27
75	7	2	3	5	10	24
76	4	3	2	2	10	14
77	2	1	1	2	1	5
78	1	1	1	1	4	4
79	1	3	2	2	3	2
80	—	1	—	—	2	—
81	—	—	1	1	—	—

TABLE OF SERIATIONS.

Breadth-Height Index.

	Kaffirs.	Zulus.	Angonis.	Eastern Bantus.	Ashantis.
90	—	—	—	1	—
91	—	—	—	—	—
92	—	—	1	2	—
93	—	—	2	3	2
94	2	1	2	2	—
95	1	—	—	—	—
96	5	1	—	2	3
97	2	2	—	1	4
98	11	2	—	3	9
99	3	1	1	2	1
100	5	3	2	7	3
101	8	1	2	3	10
102	6	2	2	5	3
103	3	—	2	3	4
104	1	3	1	2	4
105	2	1	2	2	5
106	2	—	2	5	4
107	2	—	2	2	5
108	—	1	1	1	3
109	—	—	1	1	1
110	—	—	—	—	—
111	—	—	—	—	1
112	—	—	—	—	1
113	—	—	—	—	1
114	—	—	—	—	1
115	—	1	—	—	—
116	—	—	1	1	—

TABLE OF SERIATIONS.

Alveolar Index.

	Kaffirs.	Zulus.	Angonis.	Eastern Bantus.	Ashantis.	Ancient Egyptians.
85	—	—	—	—	—	2
86	—	—	—	—	—	—
87	—	—	—	—	—	1
88	—	—	—	—	—	1
89	1	—	—	—	—	2
90	—	—	—	—	—	8
91	—	—	—	—	—	6
92	—	—	—	—	1	9
93	—	—	—	—	3	14
94	2	1	1	1	—	13
95	2	1	2	3	1	20
96	1	—	—	—	2	23
97	6	1	1	2	1	17
98	6	2	2	5	5	12
99	1	3	3	4	8	12
100	8	2	1	2	6	9
101	6	1	3	5	5	6
102	8	2	4	6	4	3
103	—	1	1	2	7	3
104	6	1	2	4	3	1
105	2	1	3	7	1	3
106	5	2	1	3	7	—
107	1	1	1	3	3	—
108	—	—	—	1	—	—
109	1	1	—	—	1	—
110	—	—	—	—	2	—

TABLE OF SERIATIONS.

ORBITAL INDEX.

	Kaffirs.	Zulus.	Angonis.	Eastern Bantus.	Ashantis.	Ancient Egyptians.
71	—	—	—	—	—	1
72	—	—	—	—	—	—
73	—	—	—	—	—	2
74	—	—	—	—	—	—
75	1	—	—	—	1	3
76	—	—	—	—	—	6
77	1	—	1	1	—	7
78	—	—	—	—	1	2
79	3	2	1	1	4	8
80	4	2	—	—	1	9
81	2	1	—	—	—	5
82	5	2	2	2	3	17
83	2	3	—	2	2	12
84	4	—	2	6	3	9
85	5	3	2	3	1	17
86	1	1	1	2	7	8
87	9	2	1	6	7	18
88	2	—	1	1	3	5
89	6	—	2	6	9	13
90	3	1	2	4	3	13
91	—	—	—	—	1	1
92	3	1	1	5	10	10
93	1	—	—	—	—	1
94	1	2	4	6	1	2
95	2	2	—	—	2	7
96	1	—	—	1	—	—
97	2	—	1	3	4	4
98	—	—	—	—	—	—
99	—	—	—	—	—	—
100	—	—	—	1	1	1
101	—	—	—	—	—	—
102	—	—	—	—	—	—
103	—	—	—	1	1	1
104	—	—	—	—	—	—
105	—	—	—	—	—	—
106	—	—	—	—	—	—
107	—	—	—	1	—	—

TABLE OF SERIATIONS.

NASAL INDEX.

	Kaffirs.	Zulus.	Angonis.	Eastern Bantus.	Ashantis.	Ancient Egyptians.
38	—	—	—	—	—	1
39	—	—	—	—	—	—
40	—	—	—	—	—	1
41	—	—	—	—	—	1
42	—	—	—	—	1	2
43	—	—	—	—	—	4
44	—	—	—	—	—	2
45	—	—	—	—	—	9
46	—	1	—	—	—	6
47	—	—	—	—	—	10
48	1	—	—	1	—	21
49	2	—	1	1	1	10
50	3	—	—	2	—	17
51	4	1	1	3	4	22
52	1	2	1	3	3	12
53	3	2	1	4	3	18
54	5	1	3	4	6	11
55	2	1	4	6	3	6
56	4	1	2	6	3	6
57	2	1	3	5	8	2
58	5	2	—	1	3	5
59	3	—	1	1	4	2
60	4	3	—	2	3	3
61	2	—	2	3	6	2
62	3	1	1	1	4	1
63	2	3	—	—	2	—
64	1	—	1	1	4	1
65	1	—	2	2	—	—
66	1	1	—	—	1	1
67	3	—	—	—	1	—
68	—	—	—	—	1	—
69	—	—	—	—	—	—
70	—	1	1	1	—	—
71	—	—	—	—	—	—
72	—	—	1	1	—	—

	ZULUS.													
Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Museum and Catalogue number	R.C.S. 1283	R.C.S. 1284	R.C.S. 1285	R.C.S. 1285A	R.C.S. 1285B	R.C.S. 1285C	R.C.S. 1285D	R.C.S. 1285E	R.C.S. 1285F	R.C.S. 1285G	R.C.S. 1285K	R.C.S. 1285L	R.C.S. 1285N	R.C.S. 1285O
Sex	♂	♂	♀	♂	♂	♂	♂	♀	♂	♂	♂	♂	♂	♂
Maximum glabello-occipital length	181	189	177	182	188	199	188	180	181	178	183	179	192	175
Maximum breadth	139	132	132	135	139	143	145	140	135	139	139	145	149	—
Basi-bregmatic height	145	139	133	137	149	143	148	142	138	138	134	142	140	136
Minimum frontal breadth	96	97	97	101·5	99	104	106	92	100	100	105	102	103	92
Maximum frontal breadth	115	117	109	118	118	119	118	119	117	119	124	128	129	112
Bi-stephanic breadth	114	109	106	115	118	119	118	116	113	108	124	122	125	110
Inter-pterion breadth	105	107	101	108	108	108	104	109	105	109	117	115	119	102
Inter-asterion breadth	101	107	95	105	110	115	102	108	111	109	105	113	114	—
Basi-nasal length	101	103	96	103	107	103	108	102	104	99	100	98	107	98
Basi-alveolar length	96	107	100	100	107	105	—	104	103	100	94	97	105	103
Foramen magnum length	34	37	36	35	39	40	36	35	41	34	40	39	39	35
Foramen magnum breadth	29	28	28	28	33	29	30	26	32	31	31	29	32	32
External bi-orbital breadth	105	113	104	116	108	116	117	108	107	110	110	115	112	103
Internal bi-orbital breadth	96	106	96	104	100	106	109	98	101	103	105	108	104	99
Bi-jugal breadth	108	120	112	125	119	126	125	118	116	121	119	124	117	113
Bi-maxillary breadth	96	96	89	101	95	104	113	96	96	105	91	101	93	88
Bi-zygomatic breadth	118	130	122	135	130	138	137	129	128	141	—	139	134	—
Post-malar breadth	117·5	128	120	133	130	136	135	124	125	136	—	138	130	—
Ophryo-alveolar height	86	91	94	95	92	90	—	93	99	86	100	102	99	103
Naso-alveolar height	66	68	71	70	68	66	—	67	78	63	70	77	74	77
Spino-alveolar height	25	20	23	24	22	20	—	23	28	17	26	25	25	31
Ophryo-mental height	—	—	—	149	—	—	—	142	—	—	—	—	—	—
Naso-mental height	—	—	—	123	—	—	—	116	—	—	—	—	—	—
Orbital breadth	39	38	37	40	36·5	41	41	36	39	39	39	40	38	38
Orbital height	34	30	32	32	30·5	34	34	31	33	32	35	33	35	33
Bi-dacryc breadth	19	27	23	27	23	26	27	23	26	25	28	24	25	24
Nasal height	43	49	49	48	47	46	46	45	51	49	48	53	49	48
Nasal breadth	26	26	26	29	28	29	29	27	28	31	28	27	28	26
External palatine length	52	57	56	54	58	58	—	56	59	56	55	56	55	61
Internal palatine length	50	54	50	49	52	52	—	50	51	53	48	50	50	59
External palatine breadth	60	67	63	62	68	72	68	60	74	68	64	69	63	67
Internal palatine breadth	35·5	40	36	37	40	43	40	31	39	38	36	35	38	33
Anterior palatine breadth	—	44	—	39	46	47	—	—	49	45	42	46	40	40
Dental length	—	45	—	41	43	—	—	—	45	45	46	—	44	47·5
Naso-malar curve	101	114	105	111	106	114	122	105	110	109	117	113	110·5	105
Sub-cerebral	21	24	24	25	23	23	25	26	21	22	31	25	25	25
Total frontal	136	141	123	131	114	127	138	130	130	127	130	130	143	123
Parietal	119	131	127	126	126	143	125	127	128	131	118	125	134	112
Supra-occipital	70	65	—	64	69	90	75	75	56	70	75	62	54	83
Total occipital	122	109	110	114	113	130	121	117	105	105	116	115	107	119
Total sagittal	377	381	360	371	383	400	384	374	363	363	364	370	384	354
Supra-auricular	316	300	291	303	317	312	322	302	293	301	305	316	322	—
Total transverse	460	413	432	441	450	456	471	458	450	450	450	470	479	—
Pre-auricular	243	248	221	230	248	235	241	230	247	232	251	242	261	—
Total horizontal	514	520	496	515	525	546	530	510	512	510	516	513	550	—
INDICES.														
Length-breadth	76·8	69·8	74·6	74·2	73·9	71·9	77·1	77·8	74·6	78·1	76	81	77·6	—
Length-height	80·1	73·5	75·1	75·3	79·2	71·9	78·7	78·9	76·2	77·5	73·2	79·3	72·9	77·7
Breadth-height	104·3	105·3	100·7	101·5	114·6	100	102·1	101·4	102·2	99·3	96·4	97·9	94	—
Upper facial (Kollmann)	55·9	52·3	58·2	51·8	52·3	47·8	—	51·9	60·9	44·7	—	55·4	55·2	—
Upper facial (Broca)	72·9	70	77	70·4	70·8	65·2	—	72·1	77·3	61	—	73·4	73·9	—
Total facial (Kollmann)	—	—	—	91·1	—	—	—	89·9	—	—	—	—	—	—
Total facial (Broca)	—	—	—	110·4	—	—	—	110·1	—	—	—	—	—	—
Maxillary facial	68·7	70·8	79·8	69·3	71·6	63·5	—	69·8	81·2	60	76·9	76·2	79·6	87·5
Orbital	87·2	78·9	86·5	80	83·6	82·6	82·9	86·1	84·6	81	89·7	82·5	92·1	86·8
Nasal	60·5	53·1	53·1	60·4	59·6	63	63	60	54·9	63·3	58·3	50·9	57·1	54·2
Palatal (Staphylinic)	71	74·1	72	75·5	76·9	82·7	—	62	76·5	71·7	75	70	76	55·9
Palatal (Uranic)	115·4	117·5	112·5	114·8	117·2	124·1	—	107·1	125·4	121·4	116·4	123·2	114·5	109·8
Alveolar	95	103·9	104·2	97·1	100	101·9	—	102	99	101	94	99	98·1	105·1
Dental	—	43·7	—	39·8	40·4	—	—	—	43·3	45·5	46	—	41·1	48·5
Naso-malar	105·2	107·5	109·4	106·7	106	107·5	111·9	107·1	108·9	105·8	111·4	104·6	106·2	106·1
Fronto-zygomatic	97·4	90	89·3	87·4	90·8	86·2	86·1	92·2	91·4	84·4	—	92·1	96·3	—
Stephanio-zygomatic	96·6	83·8	86·9	85·2	90·8	86·2	86·1	89·9	88·3	76·6	—	87·8	93·3	—
Relations of diameters—														
Minimum frontal breadth–maximum breadth	69·1	73·5	73·5	77·9	71·2	72·7	73·1	65·7	74·1	71·9	75·5	70·3	69·1	—
Bi-stephanic breadth–maximum breadth	82	82·6	80·3	85·2	84·9	83·2	81·4	82·8	83·7	77·7	89·2	84·1	83·9	—
Pterion breadth–maximum breadth	75·5	81·1	76·5	80	77·7	75·5	71·7	77·8	77·8	78·4	84·2	79·3	79·9	—
Asterion breadth–maximum breadth	72·7	81·1	72	77·8	79·1	80·4	70·3	77·1	82·2	78·4	75·5	77·9	76·5	—
Relations of curves—														
Sub-cerebral–total frontal	15·4	17	19·5	19·1	16	18·1	18·1	20	16·2	17·3	23·8	19·2	17·5	20·3
Frontal–total sagittal	36·1	37	34·2	35·3	37·6	31·7	35·9	34·8	35·8	35	35·7	35·1	37·2	34·7
Parietal–total sagittal	31·6	34·4	35·3	34	32·9	35·7	32·6	34	35·3	36·1	32·4	33·8	34·9	31·6
Occipital–total sagittal	32·3	28·6	30·6	30·7	29·5	32·5	31·5	31·3	28·9	28·9	31·9	31·1	27·9	33·6
Pre-auricular–total horizontal	47·3	47·7	44·6	44·7	47·2	43	45·5	45·1	48·2	45·5	48·6	47·2	47·5	—
Supra-auricular–total transverse	68·7	67·7	67·3	68·7	70·4	68·4	68·4	65·9	65·1	66·9	67·8	67·2	67·2	—

	ZULUS.										NATIVES OF THE MOZAMBIQUE COAST.			
Number	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Museum and Catalogue number	R.C.S. 1285P	B.D. 1614	B.D. 1615	B.D. 1616	B.D. 1617	B. m. 11	N. App. 47	N. 407b	N. 407c	N. 407d	N. 428	N. 430	N. 431	B. O; 5
Sex	♀	♂	♂	♂	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂
Maximum glabello-occipital length	181	188	182	183	184	187·5	180	192	184	175	180	186	182·5	180
Maximum breadth	120	140	129	134	133	134	132	133	133	130	136	131	122·5	134
Basi-bregmatic height	128	136	139	139	138	148	132	132·5	131	126	130	128	123	127
Minimum frontal breadth	86	103	103	104	101	90	92	98	100	90	84	92	93	91
Maximum frontal breadth	103	121	113	120	120	—	117	115	118	111	112	119	108	—
Bi-stephanic breadth	94	121	103	118	117	—	109	115	—	107	95	114	107·5	—
Inter-pterion breadth	101	107	103	106	109	—	101	109	105	100	109	111	100	—
Inter-asterion breadth	101	114	113	101	110	—	95	110	101	103	110	112	104	—
Basi-nasal length	103	101	112	102	102	101	99	100	104	86	99	96	96	97
Basi-alveolar length	100	103	111	—	108	99	97	103	110	86	103	101	102	103
Foramen magnum length	34	35	39	36	40	—	37	36	38	36	39	38	38	—
Foramen magnum breadth	26	29	31	29	33	—	29	29	29	30	29	29	28	—
External bi-orbital breadth	98	110	112	114	112	—	99	108	109	92	98	101	99	—
Internal bi-orbital breadth	91	102	107	107	104	—	95	103	104	86	93	96	95	—
Bi-jugal breadth	104	118	125	116	120	—	—	117	118	—	111	109	104	—
Bi-maxillary breadth	91	101	107	95	101	89	94	100	94	—	94	92	90	95
Bi-zygomatic breadth	120	134	140	126	134	121	—	—	132	—	128	121	114	128
Post-malar breadth	117	—	139	123	132	—	—	—	131	—	124	119	112	—
Ophryo-alveolar height	91	97	93	90	99	—	80	92	102·5	72	102	87	81	—
Naso-alveolar height	67	71	70	67	72	56	61	68	78	56	74	63	63	72
Spino-alveolar height	21·5	22	24	—	22	—	19	22	29	16	22	22	20	—
Ophryo-mental height	—	—	—	—	—	—	—	—	149	—	150	—	117	—
Naso-mental height	—	—	—	—	—	104	—	—	126	—	123	—	100	113
Orbital breadth	36	38	41	39	40	43	35	39	40	34	37	37	37	39
Orbital height	34	36	34	33	32	35	33	37	31·5	32	38	36	32	36
Bi-dacryc breadth	19	25	24	29	22	—	22	24	22	17	20	18	21	—
Nasal height	46	50	47	43	50	42	42	46	51	38	52	43	43	46·5
Nasal breadth	24	28	31	30	23	29	26	24	27	22	27	23	24	28
External palatine length	54	58	58	—	60	—	53	54	64	—	57	54	57	—
Internal palatine length	50	54	52	—	55	51	48	50	57	—	54	50	54	59
External palatine breadth	61	67	61	—	70	—	60	65	62	—	65	58	60	—
Internal palatine breadth	36	39	38	—	41	41	38	40	33	—	38	34	30	42
Anterior palatine breadth	39	43	41	—	42	—	40	40	37	—	36	40	42	—
Dental length	—	46	43	—	—	—	41	44	46	—	—	43	46	—
Naso-malar curve	98	110	117	118	113	—	101	113	117	92	101	101	108	—
Sub-cerebral	22	25	23	22	28	—	20	25	25	—	29	27	19	—
Total frontal	117	133	125	127	130	—	132	129	139	—	122	127	121	—
Parietal	120	137	133	131	130	—	121	138	130	—	128	139	124	—
Supra-occipital	67	70	56	70	65	—	68	71	49	—	65	72	50	—
Total occipital	119	113	98	113	102	—	108	119	93	—	114	110	110	—
Total sagittal	356	383	356	371	362	—	361	386	362	—	361	376	355	—
Supra-auricular	263	315	285	310	304	—	—	305	297	—	300	295	281	—
Total transverse	408	467	436	444	448	—	—	441	447	—	442	426	411	—
Pre-auricular	233	239	236	236	232	—	—	226	246	—	228	231	230	—
Total horizontal	490	531	505	511	506	—	—	527	515	—	503	515	495	—
INDICES.														
Length-breadth	66·3	74·5	70·9	73·2	72·3	71·5	73·3	69·3	72·3	74·3	75·6	70·4	67·1	74·4
Length-height	70·7	72·3	76·4	76	75	80	73·3	69	71·2	72	72·2	68·8	67·4	70·2
Breadth-height	106·7	97·1	107·8	103·7	103·8	110·4	100	99·6	98·5	96·9	95·6	97·7	100·4	94·8
Upper facial (Kollmann)	55·8	53	50	53·2	53·7	45·2	—	—	59·1	—	57·8	52·1	55·3	56·2
Upper facial (Broca)	75·8	72·4	66·4	71·4	73·9	—	—	—	77·7	—	79·7	71·9	71·1	—
Total facial (Kollmann)	—	—	—	—	—	83·9	—	—	95·5	—	96·1	—	87·7	88·3
Total facial (Broca)	—	—	—	—	—	—	—	—	112·9	—	117·2	—	102·6	—
Maxillary facial	73·6	70·3	65·4	70·5	71·3	62·9	64·9	68	83	—	78·7	68·5	70	75·8
Orbital	94·4	94·7	82·9	84·6	80	86·4	94·3	94·9	78·7	94·1	102·7	97·3	86·5	92·3
Nasal	52·2	56	66	69·8	46	69	61·9	52·2	52·9	57·8	51·9	53·5	55·8	60·2
Palatal (Staphylinic)	72	72·2	73·1	—	74·5	80·4	79·2	80	57·9	—	70·4	68	55·6	71·2
Palatal (Uranic)	113	115·5	105·2	—	116·7	—	113·2	120·4	96·9	—	114	107·4	105·3	—
Alveolar	97·1	102	99·1	—	105·9	98	98	103	105·8	100	104	105·2	106·3	106·1
Dental	—	45·5	38·4	—	44·1	—	41·4	44	44·2	—	—	45·8	47·9	—
Naso-malar	107·7	107·8	109·3	110·3	108·7	—	106·3	109·7	112·5	107	108·6	105·2	113·7	—
Fronto-zygomatic	85·8	90·3	80·7	95·2	89·6	—	—	—	89·4	—	87·5	98·3	94·7	—
Stephanio-zygomatic	78·3	90·3	73·6	93·7	87·3	—	—	—	—	—	74·2	94·2	94·3	—
Relations of diameters—														
Minimum frontal breadth–maximum breadth	71·7	73·6	79·8	77·6	75·9	—	69·7	73·7	75·2	69·2	61·8	70·3	75·9	—
Bi-stephanic breadth–maximum breadth	78·3	86·4	79·8	88·1	88	—	82·6	86·5	—	82·3	69·9	87	87·8	—
Pterion breadth–maximum breadth	84·2	76·4	79·8	79·1	81·9	—	76·5	82	78·9	76·9	80·1	84·7	81·6	—
Asterion breadth–maximum breadth	84·2	81·4	87·6	75·4	82·7	—	72	82·7	75·9	79·2	80·9	85·5	84·9	—
Relations of curves—														
Sub-cerebral–total frontal	18·8	18·8	18·4	17·3	21·5	—	15·2	19·4	18	—	23·8	21·3	15·7	—
Frontal–total sagittal	32·9	31·7	35·1	34·2	35·9	—	36·6	33·4	38·4	—	33·5	33·7	34·1	—
Parietal–total sagittal	33·7	35·8	37·4	35·3	35·9	—	33·5	35·8	35·9	—	35·2	37	34·9	—
Occipital–total sagittal	33·4	29·5	27·5	30·5	28·2	—	29·9	30·8	25·7	—	31·3	29·3	31	—
Pre-auricular–total horizontal	47·6	45	46·7	46·2	45·8	—	—	42·9	47·8	—	45·3	44·9	46·5	—
Supra-auricular–total transverse	64·4	67·5	65·4	69·8	67·9	—	—	69·2	66·4	—	67·9	69·2	68·4	—

	NATIVES OF THE MOZAMBIQUE COAST.		ANGONIS.											
Number	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Museum and Catalogue number	B.M. 84.9,5.2	C. 1727	B.M. 92.6.31 1	B.M. 92.6.31 2	B.M. 92.6.31 3	B.M. 92.6.31 4	B.M. 92.6.31 5	B.M. 92.6.31 6	B.M. 92.6.31 7	B.M. 92.6.31 8	B.M. 92.6.31 9	B.M. 92.6.31 10	B.M. 92.6.31 11	B.M. 92.6.31 12
Sex	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
Maximum glabello-occipital length	197	170	190	188	189	183	185	180	178	185	183	182	194	188
Maximum breadth	142	126	140	131	127	128	130	135	139	137	134	128·5	131	133
Basi-bregmatic height	139	114	139	134	148	137	132	143	130	127	145	132	138	132·5
Minimum frontal breadth	102	88	101	96	101	101	91	94	97	104	101	93	98	95
Maximum frontal breadth	123	108	124	118	122	114	109	120	121	115	121	108	114	119
Bi-stephanic breadth	117	108·5	123	117·5	112	112	107	118·5	121	107	121	105	114	110
Inter-pterion breadth	111	100	109·5	109·5	116	103·5	94	110	119	105	107	103	108	110
Inter-asterion breadth	112	101	111·5	110	112	104	104	107	104	109	100	109	108	105
Basi-nasal length	106	86	107	97	109	105	92·5	101	96	100	106	101	109	101
Basi-alveolar length	104	92	106·5	103·5	107	103	94	101	98·5	105	111	—	110	100
Foramen magnum length	38	35	37	37	—	44	39	37	34	34	33	38	40	38
Foramen magnum breadth	31	29	26	30	30	30	26·5	27	26	31	27	31	33	30
External bi-orbital breadth	108	94	106·5	112	113	108·5	96	103	102	111	107	109	110	108
Internal bi-orbital breadth	100	90	98	101·5	102	100	89	98	95	99	101	99	106	101
Bi-jugal breadth	124	104·5	—	—	123	—	103	—	116	122	111	115	119	—
Bi-maxillary breadth	95	86	87	—	105	91	86	—	96	98	97	91	99·5	97
Bi-zygomatic breadth	139	113	—	—	—	—	110	—	—	130	121	—	—	—
Post-malar breadth	118	112	—	—	—	—	109	—	—	—	120	—	133	—
Ophryo-alveolar height	101	75	96	99	96	91	78	95	93	92	92	95	100	100
Naso-alveolar height	69	56	72	73	73	66	61	71	69	63	73	67	75	70
Spino-alveolar height	20	17	24	24	23	20	18	30	21	22	29	18	22	21
Ophryo-mental height	149	—	—	—	—	—	—	—	—	—	—	—	—	—
Naso-mental height	118	—	—	—	—	—	—	—	—	—	—	—	—	—
Orbital breadth	40	37	37·5	39	41	38	36	34	36	37	39	36	41	38
Orbital height	34	33·5	31	35	36	37	31	32	34	33	32	34	35	35
Bi-dacryc breadth	27	21	26	21	25	23	21	29	22	24	25	25	27	22
Nasal height	50	41	49	50	50	47	44	43	50	43	46	49	51	49
Nasal breadth	30	25	27	28	28	26	24	31	27	28	28	28	30	27
External palatine length	58	53	61	60	57·5	54	49	56·5	60	59	60	—	61	58
Internal palatine length	48	47·5	55	53	52	47·5	44	52	51	51	57	49	56	54
External palatine breadth	66	50	59	63	71·5	60	59	65	61	63	64	63	71	67
Internal palatine breadth	37	26	33	32	38	34	32·5	37	33	32	35	36	36	36
Anterior palatine breadth	44	35	42	42	49	44	45	46	42	44·5	43	45	50	42
Dental length	45	—	45	44	45	—	—	—	—	—	—	—	—	—
Naso-malar curve	110	98	110	108	110	108	95	104	102	107	113	106	116	107
Sub-cerebral	32	20	25	28	25	25	17	23	26	25	20	28	25	31
Total frontal	141	123	141	129	145	121	132	131	131	125	130	122	124	129
Parietal	134	118	133	142	135	129	137	127	115	135	135	129	133	135
Supra-occipital	64	66	65	63	62	58	55	70	79	70	87	69	74	61
Total occipital	116	101	105	106	85	99	110	115	118	110	120	108	119	105
Total sagittal	391	342	379	377	365	349	379	373	364	370	385	359	376	369
Supra-auricular	312	278	324	296	314	296	296	309	304	295	333	294	307	300
Total transverse	464	401	461	436	450	428	419	440	449	427	475	421	457	435
Pre-auricular	253	213	250	241	260	240	226	220	247	231	250	236	247	214
Total horizontal	544	478	525	506	532	502	505	501	504	518	509	501	525	517
INDICES.														
Length-breadth	72·1	74·1	73·7	69·7	67·2	69·9	70·3	75	78·1	74·1	73·2	70·6	67·5	70·7
Length-height	70·6	67·1	73·2	71·3	78·3	74·9	71·4	79·4	73	68·6	79·2	72·5	71·1	70·5
Breadth-height	97·9	90·5	99·3	102·3	116·5	107	101·5	105·9	93·5	92·3	108·1	102·7	105·3	99·6
Upper facial (Kollmann)	49·6	49·6	—	—	—	—	55·5	—	—	48·5	60·3	—	—	—
Upper facial (Broca)	72·7	66·4	—	—	—	—	70·9	—	—	70·8	76	—	—	—
Total facial (Kollmann)	84·9	—	—	—	—	—	—	—	—	—	—	—	—	—
Total facial (Broca)	107·2	—	—	—	—	—	—	—	—	—	—	—	—	—
Maxillary facial	72·6	65·1	82·8	—	69·5	72·5	70·9	—	71·9	64·3	75·3	73·6	75·4	72·2
Orbital	85	91·6	82·7	89·7	87·8	97·4	86·1	94·1	94·4	89·2	82	94·4	85·4	92·1
Nasal	60	61	55·1	56	56	55·3	54·5	72·1	54	65·1	60·9	57·1	58·8	55·1
Palatal (Staphylinic)	77·1	54·7	60	60·4	73·1	71·1	73·9	71·2	64·7	62·7	61·4	73·5	64·3	66·7
Palatal (Uranic)	113·8	94·3	96·7	105	124·3	111·1	120·4	115	101·7	106·8	106·7	—	116·4	115·5
Alveolar	98·1	107	99·5	106·7	98·2	98·1	101·6	100	102·1	105	104·7	—	100·9	99
Dental	42·5	—	42·1	45·4	41·3	—	—	—	—	—	43·2	—	37·6	43·6
Naso-malar	110	108·9	112·2	107·4	107·8	108	106·7	106·1	107·4	108·1	111·9	107·1	109·4	105·9
Fronto-zygomatic	88·5	95·6	—	—	—	—	99·1	—	—	88·5	100	—	—	—
Stephanio-zygomatic	84·2	96	—	—	—	—	97·3	—	—	82·3	100	—	—	—
Relations of diameters—														
Minimum frontal breadth–maximum breadth	71·1	69·8	72·1	73·3	79·5	78·9	70	69·6	69·8	75·9	75·4	72·4	74·8	71·4
Bi-stephanic breadth–maximum breadth	82·4	86·1	87·9	89·7	88·2	87·5	82·3	87·8	87·1	78·8	90·3	81·7	87	82·7
Pterion breadth–maximum breadth	78·2	79·4	78·2	83·6	91·3	80·9	72·3	81·5	85·6	76·6	79·8	80·2	82·4	82·7
Asterion breadth–maximum breadth	78·9	80·2	79·6	84	88·2	81·2	80	79·2	74·8	79·6	74·6	84·8	82·4	78·9
Relations of curves—														
Sub-cerebral–total frontal	22·7	16·3	17·7	21·7	17·2	20·7	12·9	17·6	19·8	20	15·4	23	20·2	24
Frontal–total sagittal	36·1	36	37·2	34·2	39·7	34·7	34·8	35·1	36	33·8	33·8	34	33	35
Parietal–total sagittal	34·3	34·5	35·1	37·7	37	37	36·1	34	31·6	36·5	35·1	35·9	35·4	36·6
Occipital–total sagittal	29·7	29·5	27·7	28·1	23·3	28·3	29	30·8	32·4	29·7	31·2	30·1	31·6	28·5
Pre-auricular–total horizontal	46·5	44·6	47·6	47·6	48·9	47·8	44·6	43·9	49	44·6	49·1	47·5	47	47·2
Supra-auricular–total transverse	67·2	69·3	70·3	67·9	69·8	69·2	73	70·2	69·1	69·1	70·1	69·8	67·2	69

	ANGONIS.												
Number	43	44	45	46	47	48	49	50	51	52	53	54	55
Museum and Catalogue number	B.M. 92.6.31 13	B.M. 92.6.31 14	B.M. 92.6.31 15	B.M. 92.6.31 16	B.M. 92.6.31 17	B.M. 92.6.31 18	B.M. 92.6.31 19	B.M. 92.6.31 20	B.M. 92.6.31 21	B.M. 92.6.31 22	B.M. 92.6.31 23	B.M. 92.6.31 24	B.M. 92.6.31 25
Sex	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
Maximum glabello-occipital length	191·5	187	186	175	178	183	180	192	191	176	175	186	183
Maximum breadth	135	129	144	138	140	136	130	137	143	125	124	149	141
Basi-bregmatic height	140	138	136	129	144	137	136	137	146	136	131	140	—
Minimum frontal breadth	102	96	—	86	102	102	100	96·5	—	99	94	103	102
Maximum frontal breadth	116	115	117	111	124	125	115	112	122	121	108	121	121
Bi-stephanic breadth	116	105	115	103	122	121	113	109	122	121	106	114	123
Inter-pterion breadth	111	107	112	107	117	116	106	107	117	100	104	106	108
Inter-asterion breadth	112	102	105	106	107	103	108	101	109	100	100	115	103
Basi-nasal length	108	103	101	95	108	108	99	97	105	101	102	108	102
Basi-alveolar length	102	107	106	96	110	112	105	98	99	103	97	111	93
Foramen magnum length	35	36	34	34	33·5	33	39	38	37	37	40	32·5	33
Foramen magnum breadth	27	28	28	29	30	28	32·5	39	33	26	30	31	30
External bi-orbital breadth	113	107·5	—	99	115	115	108	—	—	110	106	112	—
Internal bi-orbital breadth	103	98	—	93	104	106	101	—	—	103	99	100	—
Bi-jugal breadth	121	—	—	109	124	—	—	—	—	—	—	—	—
Bi-maxillary breadth	106	97	—	94	101·5	94	97	—	—	—	88	—	—
Bi-zygomatic breadth	134	—	—	126	138	—	—	—	—	—	—	—	—
Post-malar breadth	133	—	—	122	135	—	—	—	—	—	—	—	—
Ophryo-alveolar height	101	91	103	109	100	100	99	99	94	92	99	104	91
Naso-alveolar height	74	66	72	85	73	75	68	68	66	69	71	73	65
Spino-alveolar height	24	22	28	30	21	24	21	22	18	18	20	27	20
Ophryo-mental height	—	—	—	—	—	—	—	—	—	—	—	—	—
Naso-mental height	—	—	—	—	—	—	—	—	—	—	—	—	—
Orbital breadth	36	39	38	36	40	41	38	40	—	—	—	—	—
Orbital height	32	35	32	34	35	35	30	31	—	33	—	—	31
Bi-dacryc breadth	30	27	28	21	27	23	23	20	—	27	23	22	21
Nasal height	51	46	45·5	51	52	53	49	47	49	51	52	47	47
Nasal breadth	27	28·5	29	26	27	26	30	27	32	29	28	33	26
External palatine length	54	55	63	57·5	63	61	59	55	54	58	55	60	56
Internal palatine length	49	53	56	52	57	57	52	50	47	52	47	54	51
External palatine breadth	71	65	64	62	70	65	63	64	62	—	65	64	55·5
Internal palatine breadth	40	37	39	34	44	38	38	37	36	35	36·5	36	30
Anterior palatine breadth	42	45	42	38	50	44	42	43	41	46	40	46·5	41
Dental length	42	46	43	45	46	45	44	42	40	—	—	—	—
Naso-malar curve	110	104	—	99	112	112	108	—	—	112	—	—	—
Sub-cerebral	29	25	30	29	28	25	31	29	29	24	29	33	—
Total frontal	132	133	130	129	127	134	128	135	145	127	121	129	—
Parietal	136	129	126	128	126	127	131	126	132	123	123	119	—
Supra-occipital	75	55	64	59	65	50	60	70	68	52	—	90	—
Total occipital	108	114	113	102	109	105	97	125	111	99	104	126	—
Total sagittal	376	376	369	359	362	356	356	386	388	349	348	374	—
Supra-auricular	298	300	304	288	310	311	298	313	328	286	—	315	—
Total transverse	442	445	445	423	465	452	445	453	459	413	—	462	—
Pre-auricular	245	252	—	229	278	262	242	246	238	233	254	235	—
Total horizontal	527	515	—	495	511	519	501	521	530	488	484	527	—
INDICES.													
Length-breadth	70·5	69	77·4	78·9	78·7	74·3	72·2	71·4	74·9	71	70·9	80·1	77
Length-height	73·1	73·8	73·1	73·7	80·9	74·9	75·6	71·4	76·4	77·3	74·9	73·5	—
Breadth-height	103·7	107	94·4	93·5	102·9	100·7	104·6	100	102·1	108·8	105·6	94	—
Upper facial (Kollmann)	55·2	—	—	67·5	52·9	—	—	—	—	—	—	—	—
Upper facial (Broca)	75·4	—	—	86·5	72·5	—	—	—	—	—	—	—	—
Total facial (Kollmann)	—	—	—	—	—	—	—	—	—	—	—	—	—
Total facial (Broca)	—	—	—	—	—	—	—	—	—	—	—	—	—
Maxillary facial	69·8	68	—	90·4	71·9	79·8	70·1	—	—	—	80·7	—	—
Orbital	88·9	89·7	84·2	94·4	87·5	85·4	78·9	77·5	—	—	—	—	—
Nasal	52·9	62	63·7	51	51·9	49·1	61·2	57·4	65·3	56·9	53·8	70·2	55·3
Palatal (Staphylinic)	81·6	69·8	69·6	65·4	77·2	66·7	73·1	74	76·6	67·3	77·7	66·7	58·8
Palatal (Uranic)	131·5	118·2	101·6	109·6	111·1	106·6	106·8	116·4	114·8	—	118·2	106·7	100
Alveolar	94·4	103·9	105	101·1	101·9	103·7	106·1	101	94·3	102	95·1	102·8	97·1
Dental	38·9	44·7	42·6	47·4	42·6	41·7	44·4	43·3	38·1	—	—	—	—
Naso-malar	106·8	106·1	—	106·5	107·7	105·7	106·9	—	—	108·7	—	—	—
Fronto-zygomatic	86·6	—	—	88·1	89·9	—	—	—	—	—	—	—	—
Stephanio-zygomatic	86·6	—	—	81·7	88·4	—	—	—	—	—	—	—	—
Relations of diameters—													
Minimum frontal breadth–maximum breadth	75·6	74·4	—	62·3	72·9	75	76·9	70·4	—	79·2	75·8	69·1	72·3
Bi-stephanic breadth–maximum breadth	85·9	81·4	79·9	74·6	87·1	89	86·9	79·6	85·3	96·8	85·5	76·5	87·2
Pterion breadth–maximum breadth	82·2	83·7	77·8	77·5	83·6	85·3	81·5	78·1	81·8	80	83·9	71·1	76·6
Asterion breadth–maximum breadth	83	79·1	72·9	76·8	76·4	75·7	83·1	73·7	76·2	80	80·6	77·2	73
Relations of curves—													
Sub-cerebral–total frontal	22	18·8	23·1	22·5	22	18·7	24·2	21·5	20	18·9	24	25·6	—
Frontal–total sagittal	35·1	35·4	35·2	35·9	35·1	36·6	36	35	37·4	36·4	34·8	34·5	—
Parietal–total sagittal	36·2	34·3	34·1	35·7	34·8	34·7	36·8	32·6	34	35·2	35·3	31·8	—
Occipital–total sagittal	28·7	30·3	30·6	28·4	30·1	28·7	27·2	32·4	28·6	28·4	29·9	33·7	—
Pre-auricular–total horizontal	46·5	48·9	—	46·3	54·4	50·5	48·3	47·2	44·9	47·7	52·5	44·6	—
Supra-auricular–total transverse	67·4	67·4	68·3	68·1	66·7	68·8	67	69·1	71·5	69·2	—	68·2	—

		WAHENGA.		UREGA.		M'KAMBO.	WAHIOU FROM QUILOA.										MANGANJA.						FRENCH UBANGI.		LOWER CONGO.		
54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81
B.M. 92. 6. 31	B.M. 92. 6. 31	B.M. 91. 5. 9	B.M. 91. 5. 9	B.M. 90. 7. 20	B.M. 90. 7. 20	B.M. 93. 12. 7	R.C.S. 1258	R.C.S. 1259	R.C.S. 1260	R.C.S. 1261	R.C.S. 1262	R.C.S. 1263	R.C.S. 1264	R.C.S. 1265	R.C.S. 1266	R.C.S. 1267	B.D. 1604	R.C.S. 1278	R.C.S. 1279	R.C.S. 1280	R.C.S. 1281	R.C.S. 1282	C. 1748	C. 1749	C. 1750	C. 1752	C. 1730
24	25	1	2	3	4	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
♂	♂	♂	♂	♂	♀	♂	♂	♂	♀	♂	♂	♀	?	?	?	?	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
186	183	190	187	182	166	184	190	186	174	186	178	178	184	183	187	175	194·5	183	181	176	178	171	180	177	179	175	188
149	141	132	139	135	126	132	133	135	135	138	127	125	127	135	139	125	138	134	131	125	122	128	134	134	133	—	137
140	—	131·5	137	—	—	132	132	130	133	128	129	125	129	125	143	130	142	129	134	132	124	128	130	131	123	—	138
103	102	94	94	96	93	104	103	102	90	98	90	96	94	97	96	93	98·5	98	95	91	88	91	92	90·5	94	96	106
121	121	116	112	114	110	115	116	115	114	113	104	105	110	121	118	109	118	119·5	111	111	106	108	113·5	113	111	116	121
114	123	103	101	114	110	108	114	111	110	113	97	89	110	121	118	107	113·5	112	108	111	101	105	106	110	108	108	115
106	108	114	101	105·5	96	107	111	112	108	103	97	100	99	115	109	103	113	110·5	105	98	94	96	106	103	109	110	115
115	103	111	107	110	102·5	121	114	107	102	113	105	102	102	106	101	93	110	109	110	100	100	101	103	106	104	107	107
108	102	105	104	—	—	105	109	102	106	103	100	99	105	96	95	93	100	97	101	99	98	96	100	97	99	—	109
111	99	103	106	—	—	105	—	109	105	102	105	106	109	—	98	96	—	—	—	—	102	104	105	99	100	—	115
32 5	33	36	40	—	—	42	37·5	32	35	32	31	33	36	34	38	37	41	36	36	37	41	38	34	—	34	—	36
31	30	25	31	—	—	36	—	29	32	26	29	27	28	28	28	27	33·5	30	29	28	33	28	39	—	30	—	31
112	—	108	101	—	103	112	111	110	97	105	100	104	101	102	100	99	105	108	106	105	97	98	106·5	105	102	105	120
100	—	98	92	—	98	104	104	102	96	100	94	99	99	96	93	94	99·5	102·5	101	98	93	94	98·5	99	97	100	108
—	—	118	112	112	108	122	122	117	115	116	110	113	112	109	109	110	117	117	119	116	110	106	118	115	108	118	124
—	—	98	98	101	89	95	90	92	91	101	83	91	95	94	99	88	104	92	102	92	90	94	93	108	93	93	100
—	—	138	121	129	121	131	133	130	131	124	122	124	—	126	123	121	136	127·5	129	126	123	116	134	124	—	—	140
—	—	135	124	126	120	—	132	127	128	120	121	121	—	122	120	119	—	—	—	—	—	—	128·5	122	120	126	133
104	91	97	95	98	76·5	93	—	100	88	90	95	96	86	91	93	90	—	—	—	—	84	80	100	93	94	96·5	109
73	65	71	70	67	55	66	—	75	66	66	70	66	64	65	64	64	—	—	—	—	59	63	71	67	74	70	73·5
27	20	21	24	22	13	16·5	—	22	22	20	23	21	21	19	21	20	—	—	—	—	17	21	22	19	25	22	22
—	—	142	142	—	—	141	—	—	—	—	—	—	—	—	—	—	—	126	134	128	129	119	—	—	139	—	160
—	—	117	116·5	—	—	114	—	—	—	—	—	—	—	—	—	—	—	103	119	107·5	105	101	108	—	119	—	126·5
—	—	38	35	38	38	41	39	40	38	38	35	38	37	38	36	36	37	37	39	38	36	37	39	38	37	39	40
—	31	35	33	33	32	34	34	36	33	32	33	34	28	37	36	34	37	31	34	33	30	33	34	36·5	33	36	39
22	21	28	24	24	23	20	22	24	24	25	23	23	25	20	20	21	26	28	27	21	23	22	17	24	20	25	24
47	47	51	46	46	43	51	48	54	45	48	47	46	43	47	47	45	49	45	47	47	43	43	50	51	51	48·5	54
33	26	27	26	23	30	28	26	27	27	27	26	27	30	25	27	23	25	26	27	26	24	23	26	29	26	24	26
60	56	55	56	59	44	57	—	61	55	58	55	59	58	—	51	54	—	—	—	—	60	54	59	54	53	52	62·5
54	51	50	52	53	40	50	48	57	51	54	51	55	54	51	47	47	—	—	—	—	53·5	51	53	49	51	45	56
64	55·5	62	60	63	58	63	66	68	58	60	60	63	65	62	62	66	—	60	62	64	62	61	59	61	62	60	70
36	30	32	32	32	34	35	43	40	30	34	33	33	34	35	33	33	—	38	37	39	37	34	36	35	36	37	37
46·5	41	44	42	45	40	38	42	44	41	41	41	42	45	44	42	40	—	42·5	38	35	40	43	43·5	41	41	36·5	42
—	—	—	43	—	—	—	—	46	—	42	—	43	44	41	42	—	—	—	41	43	44	—	—	—	—	41	50
—	—	107	100	105	104	112	112	111	104	110	102	109	106	103	99	98	107	111	108	103	102	100	105	106	105	107	115
33	—	25	26	34	21	28	27	27	21	23	27	30	22	25	29	26	24	22	20	21	25	20	30	26	20	26	37
129	—	130	127	130	—	—	132	121	122	126	125	120	122	130	145	128	135	131	116	127	122	122	126	135	119	126	134
119	—	125	128	120	—	—	134	130	115	120	121	127	123	126	127	117	134	128	135	119	118	124	119	124	120	135	131
90	—	60	70	65	—	—	56	68	66	70	67	62	65	65	70	70	85	61	55	71	52	61	—	58	41	70	62
126	—	113	108	123	—	—	97	109	106	117	111	103	110	110	112	105	128	106	104	108	103	95	115	—	111	—	110
374	—	368	363	—	—	362	363	360	343	363	357	350	355	366	384	350	397	365	355	354	343	341	360	—	350	—	375
315	—	296	298	304	—	290	297	289	298	297	278	279	291	298	320	281	311	301	300	300	268	289	282	299	274	—	307·5
462	—	446	433	434	—	436	412	430	426	432	429	418	430	435	462	420	466	436	440	430	401	418	430	423	398	—	462
235	—	240	234	235	228	248	254	227	221	225	210	230	234	246	228	230	238	251	243	235	223	208	208	230	206	—	241
527	—	517	498	505	472	515	522	515	492	515	488	490	498	513	517	488	539	513	502	485	482	478	500	500	499	—	516
80·1	77	69·5	69	74·2	75·9	71·7	70	72·6	77·6	74·2	71·3	70·2	69	73·8	74·3	71·4	71	73·2	72·4	71	68·5	74·8	74·4	75·7	74·3	—	72·9
73·5	—	69·2	73·3	—	—	71·7	69·5	69·9	76·4	68·8	72·5	70·2	70·1	68·3	76·5	74·3	73	70·5	74	75	69 7	74·8	72·2	74	68·7	—	73·4
94	—	99·6	106·2	—	—	100	99·2	96·3	98·5	92·7	101·6	100	101·6	92·6	102·9	104	102·9	96·3	102·3	105·6	101·6	100	97	97 8	92·5	—	100·7
—	—	51·4	57·4	51·9	45·5	50·4	—	57·7	50·4	53·2	57·4	53·2	—	51·6	52	52 9	—	—	—	—	48	54·3	53	54	—	—	52·5
—	—	70·3	78·5	76	63·2	71	—	76·9	67·2	72·6	77·9	77·4	—	72·2	75·6	74·4	—	—	—	—	68·3	69	74·6	75	—	—	77·9
—	—	84·8	96·3	—	—	87	—	—	—	—	—	—	—	—	—	—	—	80·8	92·2	85·3	85·4	87·1	80·6	—	—	—	90·4
—	—	102·9	117·4	—	—	107·6	—	—	—	—	—	—	—	—	—	—	—	98·8	103·9	101·6	104·9	102 6	—	—	—	—	114·3
—	—	72·4	71·4	66·3	61·8	69·5	—	81·5	72·5	65·3	84·3	72·5	67 4	69·1	64 6	72 7	—	—	—	—	65·6	67	76 3	62	79 6	75·3	73·5
—	—	92 1	94·3	86 8	84·2	82·9	87·2	90	86·8	84·2	94·3	89·5	75·7	97·4	100	94·4	100	83·8	87·2	86·8	83·3	89·2	87·2	96	89·2	92·3	97·5
70 2	55·3	52·9	56·5	50	69·8	54·9	54 2	50	60	56·2	55·3	58·7	69·8	53·2	57·4	51·1	51	57·8	57·4	55·3	55 8	53·5	52	56·9	51	49·5	48 1
66·7	58·8	64	61·5	60 4	85	70	89·6	70·2	58·8	63	64·7	60	63	68·6	70·2	70·2	—	—	—	—	69 2	66·7	67·9	71·4	70·6	82 2	66·1
106·7	100	112·7	107·1	106 8	131·8	110·5	—	111·5	105·5	103·4	109·1	106·8	112·1	—	121·6	122·2	—	—	—	—	103·3	113	100	113	117	115 4	112
102·8	97·1	98·1	101·9	—	—	100	—	106·9	99·1	99	105	107·1	103·8	—	103·2	103·2	—	—	—	—	104·1	108·3	105	102	101	—	105·5
—	—	—	41·3	—	—	—	—	45·1	—	40·8	—	43·4	41·9	42·7	44	—	—	—	40·6	43 4	44·9	—	—	—	—	—	45·9
—	—	109·2	108·7	—	106·1	107 7	107·7	108·8	108·3	110	108·5	110·1	107·1	107·3	106·5	104·2	107·5	108 3	106·9	105·1	109·7	106·4	106·6	107·1	108·2	107	106·5
—	—	84·1	92·6	88·4	90·9	87·8	87·2	88·5	87	91·1	85·2	84·7	—	96	95·9	90·1	86·8	93·7	86	88·1	86·2	93·1	84·7	91·1	—	—	86·4
—	—	74·6	83·5	88·4	90·9	82·4	85·7	85·4	84	91·1	79·5	71·8	—	96	95·9	88·4	83·5	87·8	83·7	88·1	82·1	90·5	79·1	88·7	—	—	82·1
69·1	72·3	71·2	72·9	71·1	73·8	78·8	77·4	75·5	66·7	71	70·9	76·8	74	71·9	69·1	74·4	71·4	73·1	72·5	72·8	72·1	71·1	68·7	67·5	70·7	—	77·4
76·5	87·2	78	78·3	84·4	87·3	81·8	85·7	82·2	81·5	81·9	76·4	71·2	86 6	89 6	84·9	85·6	82·2	83·6	82·4	88·8	82·8	82	79·1	82·1	81·2	—	83·9
71·1	76·6	86·4	78·3	78·1	76·2	81·1	83·4	83	80	74 6	76·4	80	77·9	85·2	78·4	82·4	81·9	82 5	80·1	78·4	77	75	79·1	76·7	82	—	83·9
77·2	73	84·1	82·9	81·5	81·3	91·7	85·7	79·3	75·5	81·9	82 7	81·6	80·3	78·5	72·7	74·4	79·7	81·3	84	80	82	78·9	76·7	79·1	78·2	—	78·1
25·6	—	19·2	20·5	26·2	—	—	20·5	22·3	17·2	18·3	21·6	25	18	19·2	20	20·3	17·8	16·8	17·2	16·5	20·5	16·4	23·8	19·3	16·8	20·6	27 6
34·5	—	35·3	35	—	—	—	36·4	33·6	35·6	34·7	35	34·3	34·3	35·5	37·8	36·6	34	35·9	32·7	35·9	35·6	35·8	35	—	34	—	35 7
31 8	—	33·9	35·2	—	—	—	36·9	36·1	33·5	33·1	33·9	36·3	34·6	34·4	33·1	33·4	33·8	35·1	38	33·6	34 4	36·4	33·1	—	34·3	—	34·9
33 7	—	30·7	29·8	—	—	—	26·7	30·3	30·9	32·2	31·1	29·4	31	30·1	29·2	30	32·2	29	29·3	30·5	30	27·9	31 9	—	31·7	—	29·3
44·6	—	46·4	47	46·5	48·3	48·2	48·9	44·1	44·9	43·7	43	46·9	47	48	44·1	47·1	44·2	48·9	48·4	48·5	42·3	43·5	41·6	46	41·3	—	46·7
68·2	—	66·4	68·8	70	—	66·5	67·2	67·2	70	68·7	64·8	66·7	67·7	68·5	69·3	66·9	66·7	69	68·2	69·8	66·8	69·1	65·6	70·7	68·8	—	66·6



Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Museum and Catalogue number	N. 393	N. 393*	N. 394	N. 395	N. 396	N. 397	N. 398	N. 399	N. 400	N. 401	N. 402	N. 403	N. 404	N. 405	N. 407	N. App. 39	N. App. 10	N. App. 11	N. App 42	N App 13	N. App. 41	N. App. 15	N. App 16	C 1731	C. 1732	C. 1733	C. 1734	C. 1735	C. 1736	C. 1737	B M 87.2.4.1	C. 31·4	B.D. 1605	B.D. 1606	B.D 1607	B.D 1608	B.D 1609	B.D 1610	B.D 1611	B.D 1612
Sex	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♀	♀	♀	♀	♂	♂	♂	♂	♂	♂	♂	♂
Maximum glabello-occipital length	184	192	198	189	191	185	180	191	175	190	194	192	189	185	180	193	188	184	201	197	201	199	189	198	207	191	187	187·5	172	193	181	1	196	193	192	185	196	189	184	193
Maximum breadth	124	141	134	134	135	141	137	135	132	144	137	138	138	131	128	—	—	142	140	141	131	140	137	136	141	134	142	146	136	135·5	145·5	1	137	141	142	129	137	135	134	137
Basi-bregmatic height	133	149	133	137	138	135	135	139	131	138	137	145	131	141	144	137	135	139	142	141	141	141	137	141	136	136	131	140	137·5	141	140	2	134	137	141	136	134	135	134	137
Minimum frontal breadth	99	104	99	105	95	103	101	100	91	100	99	105	99·5	103	96	108	100	102	107	98	105	101	95	101·5	106	106	99	108·5	91	103	100	5	103	99	97	100	103	98	102	98
Maximum frontal breadth	111	130	108	109	115	125	124	113	119	116	116	117	112	121	104	—	113	122	119	119	117	125	112	120	116	122	121	123	110	131	119	4	118	121	125	108	114	111	108	113
Bi-stephanic breadth	104	119	97	109	101	121	121	109	108	115	108	98	114	115	101	—	113	117	102	103	98	122	99	116	109	121	119	128	104	123	110	4	110	112	110	106	111	107	104	107
Inter-pterion breadth	104	114	103	112	107	120	113	103	112	102	102	110	111	105	100	—	110	116	111	113	107	115	105	115	115	115	109	115	102	116	111	7	117	113	118	103	113	107	105	110
Inter-asterion breadth	104	109	111	112	112	110	111	109	109	110	120	110	111	107	97	—	109	109	115	111	113	107	95	119	118	111	100	103	100	108	107	8	104	102	108	102	105	103	102	103
Basi-nasal length	110	107	111	103	104	102	96	115	94	113	99	108	95	107	108	105	105	103	110	—	111	104	93	102·5	115	106	105	102	94	112·5	105	5	102	102	112	100	102	102	102	102
Basi-alveolar length	99	110	96	86	91	101	93	99	90	97	99	94	91	98	84	96	89	81	102	—	98	91	91	95	99	89·5	87	101·5	85	99	98	1	98·5	91	98	91	98	93	93	94
Foramen magnum length	35	38	38	40	40	37	36	35	37	39	40	45	34	43	36	42	38	31	39	36	39	41	32	37·5	36	35·5	31·5	37	36	40	37	2	35	34	37	36	41	38	34	36
Foramen magnum breadth	28	30	33	34	30	31	30	28	32	29	30	30	28	36	31	31	28	30	29	25	32	33	27	31·5	28·5	29	28	30	30	32	27·5	2	29	27	30	27	30	28	28	28
External bi-orbital breadth	114	114	109	112	112	114	104	113	102	112	105	118	114	116	105	118	113	111	115	111	117	109	—	114	119	110	112	118	101	119·5	115	5	111	109	110	112	109	109	110	109
Internal bi-orbital breadth	106	106	104	106	108	108	98	106	95	107	100	112	107	108	97	111	106	103	108	—	107	103	—	103	110	104	103	107·5	91	108	—	5	104	103	100	103	102	—	—	—
Bi-jugal breadth	121	123	125	123	129	127	111	123	112	120	115	129	—	119	102	118	121	114	121	—	107	128	117	126	126	112	121	129	112	122	118	5	122	118	119	119	—	—	—	—
Bi-maxillary breadth	—	101	98	92	96	95	84	98	80	104	94	—	—	—	103	95	91	93	103	—	94	103	94	94	101	86	94	101	86	88	102	7	107	91	—	87	—	—	—	—	—
Bi-zygomatic breadth	133	110	138	135	138	135	139	136	121	133	127	138	135	136	131	—	135	131	141	—	142	143	—	141·5	137	124	135	138·5	110	131	119	4·5	134	128	133	131	—	—	—	—
Post-malar breadth	—	137	134	134	137	138	126	133	123	130	126	137·5	131	133	—	—	132	132	148	—	142	—	—	129	135	122·5	133	138	116	131	119	5	129	126	—	122	—	—	—	—
Ophryo-alveolar height	90	110	96	86	91	101	93	99	90	97	99	94	91	98	84	96	89	81	102	—	98	91	91	95	99	89·5	87	101·5	85	99	98	1	98·5	91	98	91	98	93	93	94
Naso-alveolar height	68	83	73	66	67	74	72	74	70	71	66	66	69	76	63	69	64	64	75	—	64	72	70	75	71	68	64	71	62	72	67	7	71	61	67	61	67	63	63	63
Spino-alveolar height	21	31	24	18	26	22	20	24	22	24	19	17·5	19	25	18	24	19	19	23	—	20	24	23	24	24	25	18	25	24	24	17	0	22	26	24	16	18	17	17	17
Ophryo-mental height	140	—	147	133	142	173	144	—	—	145	—	—	—	—	—	148	—	131	—	—	—	—	—	111	149	139	140	168	128	143	142	1	—	—	147	118	—	—	—	—
Naso-mental height	118	—	121	113	116	122	123	—	—	119	—	—	—	—	—	128	104	115	—	—	—	—	—	121·5	121·5	117	117	128	105	116	102	—	—	—	107	91	—	—	—	—
Orbital breadth	42	39	40	42	42	41	38	40	37	40	40	44	38	42	38	42	39	40	41	—	40	38	37	39	42	40	39·5	40	36	41	40	1	37	39	38·5	40	40	41	41	41
Orbital height	34	38	32	34	35	33	32	32	33	32	35	35	33	37	33	38	34	35	36	—	35	33	32	33	35	30	33·5	35	34	34	34	4·5	36	31	34·5	35	35	34	34	34
Bi-dacryc breadth	21	28	20	24	21	25	21	24	22	22	21·5	24	22	25	20	25	23	23	27	27	25	25	25	26	27	22	22	25·5	22	23	23	5	26	22	25	23	24	23	23	23
Nasal height	48	53	50	48	43	54	50	50	42	47	48	48	46	45	45	48	47	47	52	—	51	52	45	51	52	45	47	50	47	51	49	7	51	41	47	45	47	47	47	47
Nasal breadth	27	28	30	26	28	29	24	25	26	24	25	29	30	29	30	30	26	29	30	—	27	26	26	27	27	26	25·5	26	25	25	25	1	28	27	28	27	28	27	27	27
External palatine length	59	60	60	57	56	57	55	62	54	62	57	63	60	63	55	60	56	56	61	—	62	59	59	59	56·5	56	52	56·5	52	59	57	4·5	58	57	59	54	57	57	57	57
Internal palatine length	55	56	57	51	53	52	49	57	48	56	53	57	54	59	48	57	53	50	54	—	52	52	51	52	54	50	51	52	48	53	51	4·5	53	51	54	49	54	52	52	52
External palatine breadth	63	68	67	60	64	61	59	66	60	66	62	67	63	67	59	64	61	58	69	—	68	62	62	65	63	65	61	68	58	65	64	1	63	61	64	61	64	64	64	64
Internal palatine breadth	41	44	39	33	40	36	35	35	35	37	37	41	37	39	41	42	42	42	42	—	47	39	39	41	45	41·5	41	44	37	41	37	1	42	41	42	41	41	41	41	41
Anterior palatine breadth	45	41	46	39	43	39	36	44	43	43	43	47	43	47	43	47	47	41	47	—	47	42	—	41	41	41·5	—	46·5	42	49	45	1	—	—	—	—	—	—	—	—
Dental length	13	14	13	13	14	9	11	—	10	—	—	—	—	—	—	—	—	—	—	—	16	—	—	16	14	11·5	—	16·5	12	19	16·5	1	107	110	105	112	110	108	107	107
Naso-malar curve	118	111	113	115	113	119	109	115	106	111	110	122	112	119	104	120	112	108	116	—	116	112	—	111	120	111	111·5	112·5	98·5	116	111	1	29	28	32	21	30	29	29	29
Sub-cerebral	22	25	20	25	22	21	25	22	20	26	22	20	26	22	22	23	20	22	28	24	24	19	25	20	25	23	23	25	24	29	25	1	133	110	136	122	135	127	127	127
Total frontal	121	115	122	133	132	131	130	130	125	132	130	129	131	135	125	135	125	135	140	137	133	135	125	111·5	132	110	132	110	120	121	125	1	133	117	113	125	118	117	117	117
Parietal	128	138	129	119	135	144	139	130	126	126	128	131	127	144	127	144	127	144	143	144	143	142	137	134	138	141	125·5	121	129	135	127	1	133	147	143	135	137	137	137	137
Supra-occipital	69	60	55	70	68	71	62	61	58	65	55	58	61	63	61	73	57	75	59	71	58	70	71	75	71	75	71	82	—	—	—	1	71	80	87	75	77	77	77	77
Total occipital	110	116	115	121	120	136	112	119	106	116	118	108	112	126	112	123	112	124	115	115	115	125	123	124	115	116	115	123	112	121	117	1	129	122	128	118	117	117	117	117
Total sagittal	359	399	365	373	387	414	381	379	357	371	373	368	370	403	350	402	354	403	398	395	391	402	385	374	398	367	376	411	349	396	382	1	395	399	377	370	372	371	371	371
Supra-auricular	286	330	287	300	305	306	302	295	305	305	311	302	311	304	295	317	297	308	324	317	297	314	297	297	314	297	297	325	297	325	297	1	290	315	321	291	292	292	292	292
Total transverse	432	481	418	415	452	452	442	452	411	460	455	427	447	467	438	462	459	470	474	474	454	461	443	454	458	456	451	480	439	470	444	1	446	451	447	435	441	435	435	435
Pre-auricular	240	270	251	247	247	256	254	229	233	236	250	225	247	247	247	—	250	258	266	266	250	250	238	248	263	269	258	259	248	247	242	1	251	245	257	224	246	246	246	246
Total horizontal	499	587	518	517	525	552	529	529	495	547	529	527	527	522	494	—	518	522	555	540	534	525	512	539	536	540	527	536	485	510	500	1	538	535	531	511	536	526	526	526
INDICES.																																								
Length-breadth	67·4	73·4	67·7	70·9	70·7	73·8	72·5	70·7	75·4	75·7	70·6	71·9	73	72·1	71·1	—	—	77·2	69	71·6	66·7	73·7	72·5	68·7	68·1	69·1	75·9	77·9	75·6	74·5	78·5	3	69·9	74·6	74	69·8	74·1	73·5	73·1	73·9
Length-height	72·3	77·6	67·2	72·5	72·3	73·2	71·1	73·3	74·9	72·6	70·6	73·3	72·3	74·4	80	—	—	73·7	70	74·1	71·6	71·2	72·5	72·7	65·7	70·1	71·7	74·7	71·7	74·7	71·4	3·3	68·4	71	72·9	73	71·6	72·6	72·8	73·1
Breadth-height	107·3	105·7	99·3	102·2	102·2	97·2	98·5	103	99·2	102	97·7	97·2	94·7	93·1	98·4	—	97·4	98·7	101	102·1	97·7	101·7	100	103·9	96·5	101·5	99·2	105·8	98·5	107·4	97·8	4·1	97·8	95·1	98·6	105	97·8	98·5	98·5	98·5
Upper facial (Kollmann)	51·1	50·3	52·9	48·9	48·6	53·2	55·4	51·4	56·5	53·1	52	55·2	51·1	55·9	48·4	—	—	47·4	53	—	54·1	—	—	57·6	51·8	51·8	47·4	53·4	52·1	55·1	53·6	3	53	50	50·4	45·7	49	49·1	49·1	49·1
Upper facial (Broca)	67·7	78·6	69·4	63·7	65·2	68·3	71·5	72·8	72·6	72·9	70·9	68·1	67·4	72·1	69·4	—	—	65·9	72	—	67·1	—	—	65·8	68·6	71·1	65·8	72·4	68·2	68·5	67·5	3	68·4	71·1	73·7	68·5	71·4	71·4	71·4	71·4
Total facial (Kollmann)	88·7	—	87·7	83·7	84·1	87·8	91·6	—	—	89·5	—	—	—	—	—	—	—	—	100	—	—	—	—	107·2	108·8	112·1	103·7	125·6	107·6	109·2	103·7	1	—	—	103	92·1	—	—	—	—
Total facial (Broca)	105·3	—	106·5	98·9	102·9	110·1	110·8	—	—	106·3	103	103·6	—	113·6	98·4	113·6	98·4	113·6	102	103·6	98·6	102	98·4	102·7	98·3	99·1	98·4	107·1	98·4	102·7	98·4	1	98·4	98·4	98·4	98·4	98·4	98·4	98·4	98·4
Maxillary facial	—	82·2	74·5	71·7	69·8	77·1	75·7	73·5	78·7	68·3	74·2	—	—	—	—	—	—	—	84·6	87·5	87·5	84·2	84·2	87·5	83·3	75	84·2	87·5	84·2	87·5	84·2	3	97·3	79·5	89·6	87·5	87·5	87·5	87·5	87·5
Orbital	81	97·4	80	81	84·3	90·5	84·2	80	86·4	—	90·9	90·9	86·8	90·2	78·6	86·4	90·9	87·5	87	—	85·1	94·2	94·2	84·6	87·5	87·5	84·6	87·5	94·4	87·5	87·5	87·5	3	94·9	87·5	94·9	87·5	87·5	87·5	87·5	87·5
Nasal	56·5	52·8	60	54·2	63·1	53·7	48	50	59·1	53·1	51	52·1	65·2	63·8	66·6	58·8	57·4	61·7	57	—	58·8	52·1	54·2	56	54·9	56·6	56·2	54·5	56·2	54·9	56·2	54·9	3	53·5	56·1	58·3	54·5	54·5	54·5	54·5	54·5
Palatal (staphyline)	74·5	78·5	68·4	64·7	75·5	68·2	71·4	61·4	75	69·4	73·5	76·7	72·5	76·1	72·7	75	72·3	75·7	74·2	74·2	74·2	74·2	74·2	74·2	73·5	71·1	74·6	74·2	73·5	74·2	74·2	3	69·8	72·2	69·7	74·1	74·1	74·1	74·1	74·1
Palatal (uranic)	106·5	113·3	111·7	105·3	114·3	107	102·5	111·1	103·5	113·1	111·5	105·9	115·7	107·7	105·6	105	106·3	113·6	113	—	106·7	103·6	113	106·7	106·1	106·1	117·3	113·4	120·4	113	115·7	3·5	108·6	110·5	108·4	110·5	110·5	110·5	110·5	110·5
Alveolar	106·5	113·3	111·7	105·3	114·3	107	102·5	111·1	103·5	113·1	111·5	105·9	115·7	107·7	105·6	105	106·3	113·6	113	—	106·7	103·6	113	106·7	106·1	106·1	117·3	113·4	120·4	113	115·7	3·5	108·6	110·5	108·4	110·5	110·5	110·5	110·5	110·5
Dental	140·6	141·9	138·1	140·6	143·1	150·1	136·2	142·8	—	147·2	148·1	147·2	147·2	147·2	147·2	147·2	147·2	147·2	147·2	147·2	147·2	147·2	147·2	147·2	147·2	147·2	147·2	147·2	147·2	147·2	147·2	1	147·2	147·2	147·2	147·2	147·2	147·2	147·2	147·2
Naso-malar	111·4	104·7	108·7	108·5	104·6	110·2	111·2	104·5	111·6	103·5	110	111·2	104·7	103·6	104·8	103·6	83·7	91	84	—	91	—	—	91·3	91·7	98·1	89·6	92·4	100	97·5	93·2	3·2	88·1	94·5	95	92·4	94·1	94·1	94·1	94·1
Fronto-zygomatic	83·5	92·2	78·3	80·7	83·3	90·9	95·4	84·3	96	87·2	84·4	84·6	79·4	84·7	83·7	87·3	72	—	72	—	71·4	—	—	71·6	72·6	78·7	67·6	83·9	76·5	74·4	73·5	3·5	74·6	94·5	91	82·4	84·1	84·1	84·1	84·1
Stephanio-zygomatic	78·2	85	70·3	80·7	73·2	87·1	93·1	84·1	87·1	85·3	77·1	77·1	77·1	77·1	77·1	77·1	77·1	77·1	76	—	77·1	—	—	77·6	77·6	79·1	74·6	74·3	70	75·3	74·3	3·8	75·2	68·7	77·1	74·3	74·3	74·3	74·3	74·3
Relations of diameters: maximum frontal breadth : maximum breadth	70·1	73·8	67·2	78·1	70·4	71·5	73·7	71·1	71·2	72·4	73·1	73·1	73·1	73·1	73·1	73·1	73·1	73·1	72	—	73·1	—	—	73·1	73·1	73·1	73·1	73·1	73·1	73·1	73·1	3	73·1	73·1	73·1	73·1	73·1	73·1	73·1	73·1
Relations of diameters: bi-stephanic breadth : maximum breadth	83·9	84·4	72·9	81·3	74·8	91·5	88·5	81·9	81·8	79·8	84·6	85·2	84·6	84·6	84·6	84·6	84·6	84·6	79	—	84·6	—	—	84·6	84·6	84·6	84·6	84·6	84·6	84·6	84·6	3	84·6	84·6	84·6	84·6	84·6	84·6	84·6	84·6
Relations of diameters: pterion breadth : maximum breadth	85·5	84·6	76·9	87·3	83·3	88·5	88·5	86·5	85·6	85·2	84·6	84·6	84·6	84·6	84·6	84·6	84·6	84·6	84·6	—	84·6	—	—	84·6	84·6	84·6	84·6	84·6	84·6	84·6	84·6	3	84·6	84·6	84·6	84·6	84·6	84·6	84·6	84·6
Relations of diameters: asterion breadth : maximum breadth	85·9	77·3	82·8	86·6	82·6	87·5	87·5	87·5	87·5	87·5	87·5	87·5	87·5	87·5	87·5	87·5	87·5	87·5	87·5	—	87·5	—	—	87·5	87·5	87·5	87·5	87·5	87·5	87·5	87·5	3	87·5	87·5	87·5	87·5	87·5	87·5	87·5	87·5
Relations of curves: auriculo-bregmatic : auriculo-frontal	18·7	20·1	20·5	15	19·7	23·9	16·2	17·7	17·6	15·1	15·4	14·2	14·2	14·2	14·2	14·2	14·2	14·2	20	—	14·2	14·2	14·2	14·2	14·2	14·2	14·2	14·2	14·2	14·2	14·2	3	14·2	14·2	14·2	14·2	14·2	14·2	14·2	14·2
Relations of curves: frontal-total sagittal	33·7	33·6	33·3	35·7	34·1	44·9	34·1	34·5	35·3	33·3	33·3	35·7	33·3	35·7	33·3	35·7	33·3	35·7	35	—	35·7	33·3	35·7	32·5	33·3	33·3	35·2	33·3	33·3	33·3	33·3	3·8	33·7	35·1	33·3	35·1	33·3	33·3	33·3	33·3
Relations of curves: parietal-total sagittal	35·7	34·6	35·2	31·9	34·9	32·3	36·5	34·3	35·3	35·3	31	32·3	33·3	32·3	36·6	31·3	34·1	33·2	28	—	35·4	37·6	36·5	32·9	31·6	29·7	29·3	33·3	31·1	—	35·9	3·2	32·7	30·6	34	30·5	32·4	32·4	32·4	32·4
Relations of curves: occipital-total sagittal	33·6	29·1	31·4	32·4	31	32·8	29·4	31·4	32·7	31	33·3	32·4	33·3	32·4	33·3	32·4	33·3	32·4	47	—	37·5	47·6	46·5	48·3	49·4	47·3	46·5	47·3	49·1	44·9	45·7	3·9	46·7	45·8	48·4	44·8	44·8	44·8	44·8	44·8
Relations of curves: pre-auricular total horizontal	48·1	50·3	48·5	47·8	47	46·4	48	43·3	47·1	45	47·1	48·8	48·5	48·3	47·5	—	47·4	48·2	47·9	49·4	46·3	47·5	46·5	46·2	45·9	46·1	47·5	46·3	45·9	46·1	46·4	3·4	45·8	47·1	45·8	47·1	47·1	47·1	47·1	47·1
Relations of curves: supra-auricular-total transverse	66·2	68·6	64·1	67·4	67·5	70·2	68·3	65·3	69·2	61·3	68·4	70·6	69·1	68·3	67·5	—	67·4	68·2	66·7	71·3	68·9	70·5	69·3	69·5	67·9	70	67·8	66·9	68·1	69·1	66·4	3·4	65	69·8	66·9	68·3	66·1	66·1	66·1	66·1

MEASUREMENTS OF MANDIBLES IN MILLIMETRES

	Zulu.			Mozambique.			Wa-Henga.		M'kambo.	Manganja.			Mobangi.				Kaffir																			Congo.
Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
	R.C.S.	R.C.S.	N.	N.	N.	B.M.	B.M.	B.M.	B.M.	R.C.S.	R.C.S.	R.C.S.	R.C.S.	R.C.S.	C.	C.	N.	N.	N.	N.	N.	N.	N.	N.	N.	C.	C.	C.	C.	C.	C.	B.M.	B.D.	B.D.	B.D.	B.D.	B.D.	C.
Museum and Catalogue number	1285A	1285E	407C	428	431	84·9 / 5·2	91·5 / 9·1	91·5 / 9·2	93·12 / 7·1	1278	1279	1280	1281	1282	1748	1750	393	394	395	396	397	398	401	App. 39	App. 41	1731	1732	1733	1734	1735	1736	1737	87·2 / 12 1	1607	1608	1611	1612	1613	1730
Sex	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♀	♂	♂	♂	♀	♂	♂	♂	♂
Bi-condyloid breadth	115	120	119	115	112	123·5	120	120	117·5	112	116	111	115·5	109	118	—	114	128	122	121	123	122	102	116	120	125	126	108·5	121	120	107	118	116·5	118	117	115	—	116	130
Bi-gonial breadth	105	108	102	92	90	103	96	92	97	95	87	91	103	90	95	86	92	92	93	98	103	95	94	94	93	101	—	97	104	105	92	97	91	112	90	91	87	86	97
Symphysial height	36	38	37	35	27	33	32	37	31	28	36	31	30·5	32	35	33	35	37	33	37	34	36	40	39	33	34	36	34	38	40	27	35	34	32	—	39	30	32	38
Molar height	29	—	29	31	21	28	27	28	28	26	28	26	27	21	29	25	27	34	29	31	30	28	29	33	27	27	30	28	31	31	24	29	29	26	27	35	27	29	32
Ramus height	51	44	45	44	45	50	44	43	55	42	44	47·5	47	39	41	49	43	48	46	50	49	44	43	46	44	52	55	48	45	53	38	56·5	46	43	47	52	45	44	60
Ramus breadth	38	39	37	41	30	57	38	34	37	37	34	35	39	30	37	29	40	42	39	37	35	29	41	40	40	35	37	35	39	40	34	39	39	40	38	42	42	40	41
Coronoid height	68	57	64	54	62	—	—	—	—	53	55	54	61	47	—	—	56	68	59	71	58	58	64	61	61	—	—	—	—	—	—	—	—	55	64	69	56	60	—
Condyloid height	56	51	53	52	48	—	—	—	—	51	47	55	56	40	—	—	53	63	64	57	53	42	54	46	55	—	—	—	—	—	—	—	—	56	62	63	54	59	—
Bi-gonial curve	216	207	206	198	175	198	176	177	187	183	181	182	185	170	195	182	205	208	194	194	182	180	220	210	208	196	—	181	—	—	193	215	210	215	209	215	209	189	195
Condylo-coronoid chord	38	42	44	37	41	41	47	37	34	42	37	39	37	33	41	29	40	43	40	37	36	40	44	39	37	—	—	—	—	—	—	—	36	40	36	44	40	40	—
Gonio-symphysial chord	100	97	98	91	78	91	85	87	91	86	85	81	89	81	84	84	95	97	85	89	84	87	102	98	96	—	—	—	—	—	—	—	94	98	93	100	92	89	—
Naso-mental height	123	116	126	123	100	118	117	116·5	114	103	119	107·5	105	101	108	119	118	121	113	116	122	123	119	128	115	121·5	121·5	117	117	128	105	116	107	107	95	—	107	111	126·5
Bi-zygomatic breadth	135	129	132	128	114	139	138	121	131	127·5	129	126	123	116	134	—	133	138	135	138	139	130	133	—	134	131·5	137	124	135	138·5	119	131	136	133	131	—	131	133	140
Indices.																																							
Total facial (Kollmann)	91·1	89·9	95·5	96·1	87·7	84·9	84·8	96·3	87	80·8	92·2	85·3	85·4	87·1	80·6	—	88·7	87·7	83·7	84·1	87·8	94·6	89·5	—	85·8	92·4	88·6	94·4	86·7	92·4	88·2	88·5	78·7	80·5	72·5	—	81·7	83·5	90·4
Gonio-zygomatic	77·8	83·7	77·3	71·9	78·9	74·1	69·6	76	74·1	74·5	67·4	72·2	83·7	77·6	73·9	—	69·2	66·7	68·9	71	74·1	73·1	70·7	—	69·4	76·8	—	78·2	77	75·8	77·3	74	66·9	84·2	68·7	—	66·4	64·7	69·3
Mandibular (Collignon)	80·6	—	78·4	88·6	77·8	84·8	84·4	75·7	90·3	92·9	77·8	83·9	88·5	65·6	82·9	75·8	77·1	91·9	87·9	83·8	88·2	77·8	72·5	84·6	81·8	79·4	83·3	82·4	81·6	77·5	88·9	82·9	85·3	81·2	—	89·7	90	90·6	84·2

NOTES ON ASHANTI SKULLS AND CRANIA.

By F. Shrubsall, B.A.

[with part of plate v.]

There are fifty-five Ashanti Crania in the museum of the Army Medical Department at Netley; these were obtained during the first expedition to Kumassi by the medical officers attached to the invading force.

The Ashanti, who speak a dialect of the Tshi language, may be regarded as typical negroes, who, secluded in the dense bush of the Gold Coast hinterland, have escaped intermixture from Europeans on the coast and the Hamitic-negro tribes pressing across the Niger plains.

The crania are small, the average capacity being only 1250 c.c., which is less than that obtained for surrounding tribes. The mean capacity of the Ashanti skulls in the museum of the Royal College of Surgeons reaches the larger sum of 1340 c.c. With these we may compare

Yoruba	1290 c.c.
Fanti	1365 „
Calabar	1425 „
Mandingo...	1460 „
Jolof	1490 „

The majority of the crania are very infantile in appearance, so that any determination of their sex would be a matter for speculation rather than certainty. I have, therefore, in taking averages and seriations entirely neglected this factor.

Ashanti skulls are long and moderately broad, the greatest breadth being biparietal, while the length as a rule is due to occipital development.

The mean cephalic index is 72·7, with a range of variation from 67–78 (11 units), and a single focus of regression at 73.

Comparing this with the mean indices of crania from the neighbouring tribes of the Guinea littoral and the Western Sudan, we have

Ashanti	(58)[1]	72·7
Fanti	(5)	76·7
Yoruba	(6)	74·1
Dahoman	(12)	72
Benin	(4)	69
Jolof	(23)	71
Mandingo	(12)	72·9

[1] The figures in brackets indicate the number of skulls examined. Such skulls are in the museums enumerated on p. 101.

A comparison of the Ashanti, as typical negroes, with the South African section of the black race—the A-bantu—and with the still earlier aborigines—the Bushmen—presents some features of interest. Classifying the *cephalic index* according to Broca's divisions, we find the following percentages:—

	Ashanti.	A-bantu.	Bushmen.
Dolichocephalic	81·5	76·2	34·5
Sub-dolichocephalic	18·5	13·9	46·5
Mesaticephalic	—	7	15·5
Sub-brachycephalic	—	2·9	3·4

This table indicates the relatively diminished breadth of the skull among the native tribes on passing northwards, while the low range of variation in the Ashanti would seem a guarantee of ethnic purity.

With regard to vertical dimensions, Ashanti skulls in the main are high rather than low, the mean *altitudinal index*[1] being 74·2. Comparing as before with other series, we have

Ashanti	(58)	74·2
Fanti	(5)	77·7
Dahoman	(12)	73
Benin	(5)	74
Mandingo	(12)	73·7
Jolof	(25)	71

Classifying and contrasting the crania according to this index, we obtain the following table of percentages:—

	Ashanti.	A-bantu.	Bushmen.
Chamæcephalic	21·5	28·8	42·3
Orthocephalic (72–75)	36·9	40·8	46·2
Hypsicehalic	41·5	30·3	11·5

Here again the gradual decrease in the index on passing from North to South at once strikes the eye.

The *breadth-height* index[2] is 102·4.

Cf. Fanti	(5)	101·5
Mandingo	(12)	101·8
Jolof	(25)	99·5

[1] Altitudinal index $= \frac{\text{height} \times 100}{\text{length}}$.

[2] Breadth-height index $= \frac{\text{height} \times 100}{\text{breadth}}$.

The percentages in the various divisions being:

	Ashanti.	A-bantu.	Bushmen.
Akrocephalic	89·2	80·7	13·4
Metriocephalic	10·8	19·2	55·8
Tapeinocephalic	—	—	30·8

In Ashanti crania the frontal region is well developed, the forehead being full and vertical, frequently even "bombé" and usually broad, although not attaining to the transverse dimensions of the Zulu-Kaffirs. In a small number of cases, owing to the unusual prominence of the glabella and superciliary ridges, the forehead appears somewhat receding. The glabella is but moderately prominent, and the superciliary ridges as a rule very inconspicuous; the sub-cerebral portion contributes but little to the total frontal curve, the percentage relation being 16·2 for crania with a very slight glabella, and 21·3 for the group in which it is more pronounced.

The frontal eminences, which are very prominent, are usually fused across the middle line. In the majority the sagittal curve passes with an uniform flexure to the bregma, is horizontal for the anterior third of the parietal bone, and then rounds off to the inion, presenting *en route* some obelial flattening. From the inion the curve passes downwards and forwards to the opisthion, the bone in this region being well marked by muscular impressions. The inferior portion of the occipital bone is horizontal. In a smaller number of skulls the sagittal curve takes a somewhat different course, passing first over a prominent glabella, flattened at ophryon, and then bends over a full forehead.

The horizontal portion extends along the posterior third of the frontal and the anterior half of the parietal bones.

The obelial flattening stands out very plainly in profile, and the occiput which is full and capsular, presents a distinct *renflement*.

The percentage relationships of the various components of the sagittal curve are indicated in the annexed table which comprises similar data for the adjacent races.

	Frontal.	Parietal.	Occipital.
Ashanti	34·4	35·1	30·6
A-bantu	34·9	34·4	30·7
Bushmen	35·2	34	30·8

Viewed in *norma occipitalis* some crania are pentagonal in appearance with a median sagittal crest, while in others the roof is vaulted in a wide, uniform arch.

In all, the side walls are flat, and the basis very square. The mastoid processes are of moderate size, and the conceptaculæ cerebelli full and prominent.

The sutures are simple, and wormian bones, even in the lambdoid suture, of exceptional occurrence.

In *norma verticalis* the crania are oval or ellipsoidal in outline with prominent frontal and parietal eminences. The majority are crypto or mesozygous, but in a small number the zygomatic processes have an exceptionally wide splay—rendering such skulls phænozygous. Many but not all are alveolarly prognathous.

The relations of the various transverse cranial diameters to the maximum breadth (= 100).

	Ashanti.	A-bantu.	Bushmen.
Minimum frontal	76·1	72·5	71·3
Maximum frontal	91	81·2	81·6
Inter-pterion	81·3	79·7	78·7
Bi-stephanic	89·6	80·4	75·7
Bi-asteric	84·3	80·9	78·7

These figures indicate a certain degree of stenocrotaphy in Ashanti crania, which is very apparent to the eye, especially in skulls with a more feminine contour.

The temporal crest is well marked and the double lineæ temporales are very distinct, curving round the posterior part of the parietal bones to join the outer, a ridge on the mastoid process, the inner, the post-zygomatic ridge; bounding between them a broad but distinct supra-mastoid groove.

Although the zygomatic arches are frequently very slender, the post-zygomatic ridge is always clearly and sharply chiselled. The temporal-squama is flat, and the fossa ill-filled with a deep gutter in the region of pterion, in front and above which the fossal surface of the posterior inferior angle of the frontal bone bulges considerably outwards. The pterion is usually of the normal H shape, although anomalies and wormian bones in this situation are by no means rare in Ashanti crania. In profile, the upper part of the face is very orthognathous, and the nose flattened and inconspicuous, the whole being largely concealed by the projection of the malars. The maxilla is sub-nasally prognathous, to a far greater extent than is indicated by Flower's index.

Comparing the Ashanti with other tribes of Upper Guinea in respect to the *alveolar index*, we find :

Ashanti	101·4
Jollah	98·9
Jolof	100·9
Mandingo	100
Fanti	99

The range of variation is 92–110 with foci of regression at 99, 103 and 106, the distribution among the various divisions being:

	Ashanti.	A-bantu.	Bushmen.
Orthognathous	11·7	20·2	43·2
Mesognathous	55	50·9	36·7
Prognathous	33·3	28·9	20·1

The faces of skulls from Ashanti are orthognathous and broad above, narrowing down in the protruding maxillary and mandibular regions. They are for the most part leptoprosopic and mesopic, but there is to be seen, on conducting an examination by the method of seriations, a distinct chamæprosopic element. This latter is perfectly harmonious; the chamæprosopic skulls, while presenting no characteristic differences in the cephalic or other cranial indices, are more platyopic, microseme, platyrhine and prognathous than the others; in short, they exhibit the negro characters in their most degraded form.

The proportions in the two groups are chamæprosope 27·3, leptoprosope 72·7.

The distribution of the naso-malar indices in the three races we have considered is of some interest.

	Ashanti.	A-bantu.	Bushmen.
Platyopic	24·6	53·2	58·5
Mesopic	49·1	31·8	32·1
Prosopic	26·3	14·9	9·4

The greater prominence of the face, as shown by this index in the true negro, than in the Bantu, in whose veins may run traces of Hamitic blood, is a matter for some surprise, and is opposed to the general impression obtained from a study of photographs of living natives. The only explanation to offer is that of Bush race intermixture, yet surely the Ashanti have also come into close contact with the Central African dwarfs, who are supposed to present the same characteristic features as their brethren in Cape Colony.

The forehead is of medium width, glabella and superciliary ridges slight, and there is a conspicuous depression above the external angular process of the frontal bone, a feature which they have in common with the Bushmen-Hottentots.

The persistence of a metopic suture either complete, or only near the glabella, is not altogether uncommon, and indeed is met with in negro races much more frequently than one would have expected.

The orbits are rectangular with very oblique transverse axes, large lachrymal canals, and wide interorbital space. The encircling bones are very massive, and the margins are consequently rounded off and ill defined.

The average *orbital indices* are:

Ashanti	(58)	88·2
Fanti	(4)	86·3
Jolof	(24)	87
Mandingo	(12)	89·3

The seriation of this index shows a range from 75 to 103 with foci of regression at 87 and 92, the distribution in the various groups being as follows:

	Ashanti.	A-bantu.	Bushmen.
Microseme	16·9	25·9	37·5
Mesoseme	32·3	34·0	44·6
Megaseme	50·8	40·1	17·8

The nose is broad and flat; the nasal bones, which are but slightly curved from side to side, and from above downwards, are set at a wide angle to one another and with the broad processes of the maxillæ, make up the breadth of the bridge so characteristic of the negro.

The naso-maxillary suture as a rule is straight.

The apertura pyriformis is usually truncated in appearance, and very broad compared to its height.

The inferior margin in some skulls is sharply cut (forma anthropina) in others is rounded off on to the front of the maxilla (forma infantalis); simian grooves are present occasionally, chiefly in chamæprosopic skulls.

In a few rare examples the nasal bones are curved, the aperture truly pyriform, and the nasal index almost leptorhine, in which case the inferior margin is as sharply chiselled as in European crania.

The average *nasal indices* are:

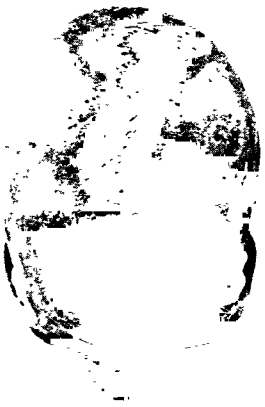
Ashanti	(58)	57·9
Fanti	(5)	56·1
Jolof	(22)	55·4
Mandingo	(12)	54·5

The seriation of this index shows no features of importance, while the distribution into divisions is:

	Ashanti.	A-bantu.	Bushmen.
Leptorhine	1·6	1·7	3·3
Mesorhine	14·5	18·9	13·3
Platyrhine	83·9	79·4	83·3



I.



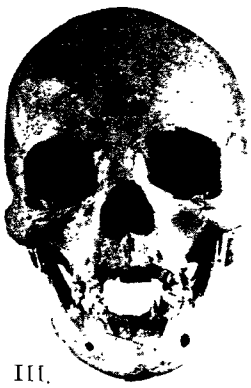




II.







III.







IV.



V.





VI.

AFRICAN SKULLS AND CRANIA.

The nasal spine is small and inconspicuous (Broca's scale Nos. 1 and 2), the maxilla broad and slight with deeply channelled canine, incisive and infra-orbital fossæ.

The palate is parabolic, and the teeth small and much worn down.

The lower jaw is slender, with sigmoid notches of medium depth, high alveolar arch and pointed receding chin; Collignon's mandibular index is 55·8.[1]

The results of the foregoing measurements may be briefly summarised by describing the Ashanti cranium as dolichocephalic, akrocephalic, mesoseme, platyrhine, mesopic and prognathous.

The general appearance of the great majority of these skulls is strongly suggestive of those of the Bush race, as was first pointed out by Dr. Williamson, so that notwithstanding the great disparity in physical features between Ashanti and Bushmen, it was with considerable surprise that I found actual measurement did not support first impressions.

The percentages in the tables of comparisons of the Ashanti, the A-bantu, and the Bushmen are entirely derived from my own previous measurements of South African crania.

These tables of percentages and the seriations are in some measure a continuation of the task commenced by Passavant,[2] for the cephalic index only, but the selection of statistics has been more strict; no index having been accepted unless the measurements on which it is based were taken in accordance with the instructions in Topinard's elements, and no attempt has been made to correlate the results of different systems of mensuration.

Key to table of Museums.

N. = Museum of Army Medical School at Netley.
C. = Anatomical Museum at Cambridge.
R.C.S. = Museum of Royal College of Surgeons.
B.D. = Barnard Davis' collection.
B. = Museum of the Vesalianum, Basle.

Explanation of part of Plate V.

Figs. IV, V and VI represent three Ashanti skulls and crania.

[1] Collignon's index = $\frac{\text{Height of mandible at level of second molar} \times 100}{\text{Height of mandible at symphysis}}$.

[2] *Craniologische Untersuchung der Neger und der Neger-Völker.* Basel, 1884

TABLE OF SERIATIONS.
LENGTH-BREADTH INDEX.

	Ashanti.	A-bantu.	Bushmen.
66	—	—	1
67	1	6	2
68	4	1	2
69	4	7	3
70	7	10	3
71	5	19	3
72	7	13	6
73	12	12	11
74	11	19	9
75	7	9	13
76	3	8	18
77	1	6	8
78	3	7	9
79	—	2	3
80	—	1	2
81	—	1	1

TABLE OF SERIATIONS.
LENGTH-HEIGHT INDEX.

	Ashanti.	A-bantu.	Bushmen.
65	—	—	3
66	—	1	—
67	1	3	6
68	1	2	2
69	3	9	9
70	2	8	26
71	4	16	10
72	6	18	13
73	5	22	11
74	13	6	6
75	10	14	3
76	10	9	5
77	1	5	—
78	4	3	2
79	3	6	—
80	2	1	—
81	—	1	—

TABLE OF SERIATIONS.
BREADTH-HEIGHT INDEX.

	Ashanti.	A-bantu.	Bushmen.
87	—	—	1
88	—	—	1
89	—	—	3
90	—	1	5
91		—	5
92	—	2	10
93	2	3	3
94	—	5	3
95	—	1	3
96	3	8	11
97	4	5	2
98	9	16	4
99	1	6	3
100	3	15	5
101	10	12	4
102	3	13	—
103	4	6	1
104	4	6	1
105	5	5	1
106	4	7	2
107	5	4	1
108	3	2	
109	1	1	—
110	—	—	—
111	1	—	—
112	1	—	—
113	1	—	—
114	1	—	—
115	—	1	—
116	—	1	—

TABLE OF SERIATIONS.
ALVEOLAR INDEX.

	Ashanti.	A-bantu.	Bushmen.
88	—	—	1
89	—	1	—
90	—	—	—
91	—	—	1
92	1	—	1
93	3	—	2
94	—	4	1
95	1	6	2
96	2	1	3
97	1	9	6
98	5	13	5
99	8	8	5
100	6	12	4
101	5	12	4
102	4	16	13
103	7	3	2
104	3	11	3
105	1	10	2
106	1	10	3
107	3	5	3
108	—	1	—
109	1	2	—
110	2	—	1

MEASUREMENTS OF CRANIA IN MILLIMETRES.—ASHANTIS.

Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58
Museum and Catalogue number	N. 306	N. 307	N. 308	N. 309	N. 310	N. 311	N. 312	N. 313	N. 314	N. 315	N. 316	N. 317	N. 318	N. 319	N. 320	N. 321	N. 322	N. 323	N. 324	N. 325	N. 326	N. 327	N. 328	N. 329	N. 330	N. 331	N. 332	N. 333	N. 334	N. 335	N. 336	N. 338	N. 339	N. 340	N. 341	N. 342	N. 343	N. 344	N. 345	N. 346	N. 347	N. 348	N. 349	N. 350	N. 351	N. 352	N. 353	N. 354	N. 355	N. 356	N. 357	N. 358	N. 359	N. 360	N. 360a	C. 1726	B.M. I. n.n.	B.M. N. 12. 14. 2
Sex																																																											
Maximum glabello-occipital length	192	187	185	190	164	167	190	181	181	186	186	186	182	170	178	178	178	186	172	189	172	184	178	170	181	172	191	166	192	175	172	175	165	183	176	173	186	180	173	185	181	192	184	169	181	177	169	—	163	171	170	173	179	177	180	180	184	196
Maximum breadth	134	127	129	131	121	126	134	130	133	131	135	138	132	125	134	130	135	136	130	130	133	130	130	133	130	124	130	130	130	124	124	130	126	138	131	127	124	130	128	130	135	130	132	125	129	124	130	119	121	122	126	130	117	133	130	126	131	124
Basi-bregmatic height	138	141	127	150	128	127	141	135	133	132	126	139	135	128	130	135	131	146	137	119	128	137	132	130	136	123	134	127	142	120	131	132	121	129	131	123	133	127	129	139	132	139	137	129	130	122	125	—	121	121	123	132	115	141	126	133·5	138	141
Bi-maxillary breadth	99	102	—	91	91	84	103	91	102	101	105	102	92	94	97	87	93	98	—	99	88	95	—	94	92	92	95	93	86	90	86	81	87	95	89	89	90	97	94	97	84	90	93	84	98	89	82	76·5	81	78	89	92	76	96	95	83·5	88	87
Bi-zygomatic breadth	132	127	—	117	115	128	132	135	124	136	122	120	—	120	128	138	—	123	119	126	—	—	127	117	131	—	122	120	114	108	100	105	124	—	114	130	122	127	126	127	122	116	—	115	106	105	—	—	108	118	103	—	125	—	123	131	
Naso-alveolar height	69	—	73	65	59	50	64	66	72	73	46	69	—	64	63	68	74	68	—	67	60	62	—	62	65	57	69	43	74	54	61	57	59	68	61	62	62	69	67	69	62	69	70	61	66	67	52	53	54	46	57	65	59	66	62	57	69	72·5
Orbital breadth	38	38	41	40	37	36	37	38	37	39	39	42	36	39	38	37	38	39	40	35	37	41	37	38	37	37	41	36	36	36	36	33	36	40	38	39	34	37	37	37	38	38	37	37	38	37	34	35	36	34	34	35	35	34	34	35
Orbital height	30	32	36	33	34	31	34	34	34	32	35	35	35	32	33	33	{ R34 L37	R35 L33	} 35	34	31	34	33	33	33	33	32	32	35	31	31	34	33	35	30	32	31	37	30	33	34	32	36	32	32	28	32	30	31	33	30	35	34	33	34	36
Nasal height	47	46	53	47	46	39	48	48	49	51	46	47	46	47	47	49	55	49	49	45	46	44	—	46	44	41	53	44	51	40	39	41	43	49	44	42	45	49	44	52	42	50	51	41	48	44	37	36	40	33	42	44	36	48	49	42	45	49
Nasal breadth	29·5	27	28	28	23	23	25	28	30	28	29	24	25	24	30	25	23	27	28	27	26	25	—	25	28	27	28·5	27	26	31	25	25	25	30	24	23	24	28	27	27	26	27	25	22	22	25	22	19	24	21	25	30	21	25	31	24	25	28
Internal bi-orbital breadth	101	100	—	98	94	92	95	99	105	105	100	104	98	101	100	96	94	107	101	94	93	107	98	97	100	95	100	98	95	99	92	87·5	91	105	97	93	93	101	95	97	101	103	98	91	103	94	86	88	88	85	89	92	85	99	100	99	99	100
Basi-nasal length	107	107	103	104	95	92	102	102	109	95	104	104	97	94	104	97	94	112	100	102	99	104	104·5	98	95	101	105	94	109	98	96	90	80	105	99	93	102	103	97	106	100	103	94	101	98	85	—	91	82	90	98	84	101	96·5	101	103	106
Basi-alveolar length	114	—	103·5	101	99	91	106	105	112	102	101	—	96	100	100	101	111	110	108	98	96	—	108	97	99	104	97	107	105	105	93	96	105	103	96	97	105	103	109	98	115	105	100	100	105	84	—	—	87	90	100	85	105	99	97	101	102
Internal palatal length	55	55	51	52	49·5	42	59	51	56	55	52	—	—	52	51	48	55	53	52	51	46	—	57	53	48	51	51	51	53	51	46	43	51	54	51	49	48	55	56	56	54	58	52	51	51	51	40	—	—	48	45	46	—	52	54	46	47	52
Internal palatal breadth	41	42	32	35	35	27	38	36	37	30	34	—	—	—	35	35	37	38	37	36	35	35	—	36	30	31	39	37	38	37	31	31·5	34	39	31	35	34	49	39	36	30	41	36	27	39	34	27	—	—	32	31	29	34	—	36	40	31	32	40
Dental length	48	—	—	—	42	—	44	—	43	43	—	—	—	—	—	—	—	47	38	43	—	—	—	44	43	38	44	—	—	41	42	—	39	46	—	44	40	—	—	41	44	—	39	46	—	44	—	—	—	—	—	—	37	43	47	—	—	—
Naso-malar curve	112	109	—	108	98	101	113	110	116	114	106	115	107	109	106	109	104	116	107	101	106	117	103	108	107	104	109	105	103	106	99	95	98	114	101	100	102	111	101	105	112	116	105	100	108	102	93	97	98	91	96	101	92	105	109	101	102	109
Frontal curve	133	127	131	126	120	120	128	125	127	122	126	137	129	120	123	129	115	140	125	132	113	128	114	116	121	112	137	117	133	115	123	136	117	127	122	122	125	126	120	127	130	140	126	116	—	119	114	120	113	114	126	123	110	119	120	127	134
Parietal curve	134	140	132	141	120	127	135	131	120	129	123	122	123	123	126	120	122	122	123	130	123	134	126	125	128	120	131	125	125	125	121	123	113	120	136	106	121	124	120	121	131	136	137	122	—	127	133	125	115	123	122	123	120	125	135	133	115	110
Occipital curve	119	115	99	114	96	95	111	109	111	110	115	118	110	101	113	118	111	120	119	120	103	109	109	95	113	108	115	107	120	102	112	115	104	116	104	110	103	—	111	107	—	120	119	122	112	121	101	100	109	111	119	122	112	121	
Total sagittal curve	386	372	362	403	345	342	375	365	367	361	367	377	368	344	362	376	348	372	355	382	350	371	349	336	365	349	383	349	378	342	356	371	334	363	359	339	366	360	349	363	372	379	373	351	351	357	351	—	329	355	349	355	325	355	371	364	374	387
Total horizontal curve	519	513	506	523	450	461	504	504	513	490	525	568	480	501	498	507	518	493	510	483	515	498	479	512	475	523	475	517	483	483	481	467	515	491	481	497	506	478	512	501	518	504	470	490	492	473	—	451	489	474	483	490	492	473	506	502
Indices.																																																											
Length-breadth	69·8	67·9	69·7	68·9	73·8	75·4	70·4	71·8	73·5	70·4	72·6	74·2	72·5	73·5	75·3	73	75·8	73·1	76·2	68·8	73·3	70·7	73	78·2	71·8	72·1	72·8	78·3	67·7	70·9	72·1	71·3	76·1	75·1	74·1	78·4	66·7	72·2	74	70·3	74·6	67·7	72·9	71	71·3	70·1	76·9	—	74·2	71·3	71·1	75·1	73·6	75·1	68·8	70	71·2	68·4
Length-height	71·9	75·1	68·6	78·9	75	76	72·8	74·6	73·5	71	67·7	74·7	74·2	75·3	73	75·8	73·6	78·5	79·7	74·1	74·4	74·5	74·2	76·5	75·1	74·4	70·2	76·5	71	68·6	76·2	75·4	73·3	70·5	74·1	74	71·5	70·6	71·6	75·1	72·9	72·4	75·7	76·3	71·8	68·9	74	—	74·2	70·8	72·1	70·3	72·3	73·7	66·7	71·1	75·2
Breadth-height	103	111	93·4	114·5	105·8	109·8	97·8	103·8	100	100·8	93·3	109·7	102·3	102·4	97	103·8	97	107·4	104·6	107·7	101·6	105·4	101·5	97·7	101·6	103·2	98·4	97·7	103·2	96·8	103·6	101·5	96	93·5	100	100·8	107·3	97·7	100·8	104·9	97·8	100·8	103·8	103·2	100·8	98·4	94·2	—	100	99·2	97·6	101·5	98·3	100·8	96·9	103	105·1	105·2
Maxillary facial	69·7	56·9	—	71·1	64·8	59·5	69·8	72·5	70·6	72·3	43·8	67·6	—	68·1	64·9	78·2	70·6	69·4	—	71·1	68·2	65·3	—	66	70·7	62	72·6	46·2	86	69	70·6	70·1	67·8	71·6	71·9	69·7	68·9	71·1	71·3	71·1	73·8	76·7	75·3	72·9	67·3	75·3	63·4	69·3	66·7	59	71·2	70·7	65·8	68·7	65·3	68·3	68·2	83·3
Upper facial (Kollmann)	52·3	45·7	—	—	50·1	43·5	52	51·6	54·5	53·3	37·1	50·7	—	—	53·3	—	56·7	57·8	50·1	—	54·5	50·1	49·2	—	—	51·2	48·7	52·7	—	60·7	45	55·5	52·8	54·1	50·4	54·6	—	54·4	53·1	54·9	54·3	49·2	54·3	57·1	52·6	—	58·3	49·1	50·5	—	—	52·8	55·1	48·5	—	49·6	—	48·8	55
Orbital	78·9	84·2	87·8	85·5	91·9	86·1	89·5	91·9	82	89·7	83·3	97·2	82	86·8	86·8	89·2	{ R86·5 L87·4	R87·5 L84·6	87·5	97·1	83·8	82·9	80·2	83·5	85·2	89·2	78	88·9	97·2	86·1	86·1	103	91·7	87·5	78·9	79·5	88·2	86·5	83·8	100	78·9	86·8	91·9	86·5	94·7	86·5	94·1	80	88·3	88·2	89·9	91·7	90·9	91·6	91·9	86·8	91·9	92·3
Nasal	61·7	58·7	52·8	62·2	69·9	59	72·8	58·3	61·2	54·9	63	51·1	54·3	51·1	63·8	51	41·8	55·1	57·1	56	55·5	56·8	—	54·3	63·6	65·9	53·8	61·4	51	77·5	64·1	61	58·1	61·2	51·5	54·8	53·3	57·1	61·1	51·9	61·9	54	59	53·7	66·7	56·8	59·5	52·8	60	61·6	59·5	68·2	58·3	52·1	63·3	57·1	55·6	57·1
Alveolar	106·5	100·9	109·5	100	101·2	98·9	103·6	103·9	102·9	102·8	107·4	97·1	—	99	104·4	106·4	101	99·1	110	105·5	99	92·3	—	110·2	102·1	98	99	103·2	98·2	107·1	109·4	103·3	101·1	100	104	103·2	95·1	101·9	106·2	102·8	98	105·5	101·9	103·4	98·2	107·1	98	—	—	101·2	100	102	98	101	102·6	96	98·1	93·4
Palatal (Virchow) staphylinic	74·5	76·4	59·3	67·3	70·7	61·3	67·4	63·3	70·6	66·1	70·9	65·4	—	—	67·3	68·6	77·1	69·1	68·6	69·2	68·6	76·1	—	63·2	56·6	61·6	76·5	72·5	70·4	69·8	66·8	68·5	79·1	72·2	59·6	71·4	70·8	72·7	69·6	64·3	55·6	70·7	69·2	52·9	76·5	66·7	67·5	—	—	75·8	61·4	73·9	—	69·2	74·1	67·4	68·1	76·9
Dental	41·9	—	—	—	44·2	—	43·1	—	39·4	45·3	—	—	—	—	—	—	—	47	37·2	43·4	—	—	—	44·9	45·3	37·6	41·9	—	—	41·8	43·7	—	—	41·9	40·4	—	—	39·8	45·4	—	39	42·2	—	46·8	—	—	—	—	—	—	37·8	—	41·3	48·7	—	—	—
Naso-malar	110·9	109	—	110·2	104·3	109·8	108·4	111·1	110·5	108·6	106	110·6	109·2	107·9	106	104·2	110·6	108·4	105·5	110·5	110·4	109·3	110·2	111·3	107	109·5	109	107·1	108·1	107·1	107·6	109·8	107·7	108·6	108·3	107·5	109·7	109·9	106·3	108·2	110·9	112·6	107·1	109·9	108	108·5	108·1	110·2	111·4	107·1	107·9	109·8	108·2	106·1	109	112·2	103	109
Relations of curves { frontal—total sagittal	31·5	34·1	36·2	36·2	34·8	35·1	34·1	31·4	34·6	33·8	34·3	36·3	35·1	34·9	34	34·3	33	34·9	37·5	34·6	33·7	34·5	32·7	34·5	34	32·1	35·8	33·5	35·2	33·6	34·6	36·4	35	35	34	34	34·2	35	34·4	35	34·9	34	33·8	33	—	33·3	32·2	—	34·3	32·1	36·1	34·6	32·6	33·5	32·1	35·4	34	31·3
parietal—total sagittal	34·7	34·9	36·5	35	37·4	37·1	36·3	35·8	35·1	35·7	34·3	32·4	35·1	35·8	34·8	34·3	35·1	32·8	34·6	34	36	36·1	36·1	37·2	35·1	37	34·2	35·8	33·1	36·5	34	32·9	33·8	33·1	37·9	29·5	33·1	34·1	34·4	33·3	36	35·9	36·7	37·6	—	35·6	37·6	—	35	33·8	35	34·6	36·9	35·2	36·1	34·1	36·1	35·3
occipital—total sagittal	30·8	30·9	27·3	28·8	27·8	27·8	29·6	29·8	30·2	30·5	31·3	31·3	29·9	29·4	31·2	31·4	31·9	32·3	27·9	31·4	30·3	29·4	31·2	28·3	31	30·9	30	30·7	31·7	29·8	31·5	30·7	31·1	31·9	28·1	36·5	32·8	30·6	31·2	31·7	29	30·1	29·5	29·3	—	31·1	30·2	—	30·7	34·1	28·9	30·7	30·5	31·3	31·8	33·5	29·9	29·5

TABLE OF SERIATIONS.

ORBITAL INDEX.

	Ashanti.	A-bantu.	Bushmen.
66	—	—	3
72	—	—	1
73	—	—	—
74	—	—	1
75	1	1	3
76	—	—	9
77	—	2	—
78	1	—	1
79	4	6	7
80	1	6	1
81	—	3	5
82	3	9	6
83	2	7	3
84	3	10	6
85	1	11	7
86	7	4	11
87	7	17	3
88	3	3	1
89	9	12	7
90	3	8	2
91	1	—	2
92	10	9	5
93	—	1	—
94	1	9	4
95	2	4	1
96	—	2	—
97	4	5	5
98	—	—	—
99	—	—	—
100	1	1	2
103	1	—	—
107	—	1	—
108	—	—	1

TABLE OF SERIATIONS.

NASAL INDEX.

	Ashanti.	A-bantu.	Bushmen.
42	1	—	—
46	—	1	—
47	—	—	—
48	—	2	1
49	1	3	2
50	—	5	1
51	4	8	4
52	3	6	2
53	3	9	6
54	6	10	5
55	3	9	1
56	3	11	5
57	8	8	—
58	3	8	4
59	4	4	2
60	3	9	7
61	6	5	4
62	4	5	8
63	2	5	2
64	4	2	—
65	—	3	1
66	1	2	4
67	1	3	2
68	1	—	—
69	—	—	1
70	—	2	1
71	—	—	—
72	—	1	—
73	—	—	—
74	—	—	1
75	—	—	—
76	—	—	—
77	1	—	—
78	—	1	—

MAY 10TH, 1898.

F. W. RUDLER, Esq., F.G.S., *President*, in the Chair.

The Minutes of the last Meeting were read and signed.

Mr. T. V. HOLMES read a paper by Mr. REGINALD K. GRANVILLE, Dr. FELIX N. ROTH and Mr. H. LING ROTH, on "The Jekris, Sobos, and Ijos (Niger Coast Protectorate)."

Discussion was carried on by Count CHARLES DI CARDI, Mr. G. L. GOMME, and others; after which a vote of thanks to the authors was passed.

Dr. GARSON then read a paper by the Rev. W. GRAY, of Jamestown, South Australia, on "Some Anthropological Notes on the Tannese."

The thanks of the Meeting were voted to the author.

NOTES ON THE JEKRIS, SOBOS AND IJOS OF THE WARRI DISTRICT OF THE NIGER COAST PROTECTORATE.

By Reginald K. Granville (late Deputy Sub-Commissioner at Warri, now Assistant Resident at Benin) and Felix N. Roth (late District Medical Officer at Warri). Prepared by H. Ling Roth.

[with plates vi to x.]

Introduction.

It will probably be a common experience of anthropologists to find that foreign residents are little able to give good accounts of the natives amongst whom they have been thrown. The causes of this inability are manifold. Many such residents are not interested in the natives, and hence do not trouble to use their eyes and ears; others really do not see and hear; while others again—and they form the more numerous class—imagine that what they have seen and heard is too trivial to be put on record, having no notion of the importance of any correct scrap of anthropological news, however small. On more than one occasion, when after a considerable amount of "pumping" I have expressed my satisfaction at having elicited a specially interesting note, my informant has been astonished into saying, "Oh! I did not think you would care to know about such little every-day things." The following notes have mostly been obtained by the process of "pumping."

Both Mr. Granville and my brother had, at my suggestion, commenced taking anthropological notes before their last return to England, and when they visited me, I wrote down the replies they gave to my inquiries, they revising the notes afterwards. While both supplied me with information, more or less equal in quality and quantity, I may mention that the medical and sanitary information is naturally derived from my brother, while the small linguistic portion is solely from Mr. Granville. As the latter is still engaged on the preparation of a Jekri grammar, only a few salient points in the language are produced here. The notes are to a certain extent meagre and fragmentary, but there was no time to do the work more systematically; nevertheless, the little that has been recorded will be found interesting and reliable.

History.

The Jekris have very fragmentary notions as to their origin, but all the notions point to a westward or Yoruba origin. Some say they are descended from the most easterly of the Yoruba kings' subjects, made up of runaway slaves,

law-breakers, etc., inter-married with adjoining tribes; they sometimes say *jekri* means a coward, a man who would not fight, and who was therefore expelled from the tribe. The Yoruba people are, however, mostly horsemen, while the Jekris are a water people who prefer to paddle many miles to walking a few yards. Another statement is that when the Portuguese came to Benin city, one of the leader's sons, a half-caste, was sent down to Warri, or, as the people themselves name the town, Jekri, and there a house was built for him. By means of the juju of the king of Benin (which appears to have always overshadowed Warri), he was declared king of that part of the delta; he brought Yoruba wives with him and was the founder of the Jekri nation. A third statement would seem to be a mixture of the two first, for it says the half-caste found at the delta the Yoruba runaways of whom he constituted himself the chief, and from these Yorubas the Jekris are descended. As, however, Warri was apparently well established when the Portuguese first visited the country, the story of the half-caste cannot hold good.

At Big Warri, a Jekri will take a stranger "to see what the monks did." There is nothing to be seen except a large open common covered with English (?) grass.

Physique.

The Jekris may average about 5 feet 7 inches in height; some of them have thinnish lips; they are not well developed about the legs.

The hands of the Jekri women are finely formed and taper, and but for the habit of biting the nails their fingers would look well; as they eat with their fingers, dipping them into the palm oil, etc., for the first inch or two, the fingers get a sort of parchmenty look. The women on Benin river, who have no loads to carry, have well-formed feet with good instep; the feet of the Warri women are nearly as good. The men also have good feet.

The Sobos and Ijos have flatter feet than the Jekris and better calves, the Sobos having the best calves of the three tribes.

The Ijos, while about the same height as the Jekris, are big men physically, with well developed biceps and bull necks; they are better made men than the Jekris, what may be called a good athletic people, and the best watermen of the delta. The women have beautiful figures and very delicately formed feet.

Spurheeledness is not marked, the feet of the natives in that respect resembling those of Europeans very much. All people prefer to paddle a couple of hours to walking a quarter of an hour.

There appear to be no big powerful men, such as are met with elsewhere on the coast.

They can see better in the dark than Europeans are able to do.

Contact with Civilisation.

The Portuguese appear to have left their mark in the country. There are numerous apparently pure negroes who are orthognathous and have aquiline noses,

and European features generally, but their hair is woolly. These European features may possibly be partly due to the Europeans who followed the Portuguese, but this is not very likely, as if we take the language into consideration we find numerous words derived from the Portuguese, such words are *issangi* blood, *asseta* plate, *quiera* spoon, *gracios* thanks, etc.

Strange to say, half-caste babies have straight hair like those of Europeans; it turns woolly afterwards.

Age.

They have no notion as to their ages, and will fix the date of a birth by some local historical fact such as the time when the first white man came up the creek, etc. They do not appear to live long, and perhaps the average age may be put down as forty: the men live longer than the women.

Skin Colour.

The Jekris are generally speaking chocolate-coloured and darker than the Sobos, who are rather copper-coloured than black.

Skin Odour.

The Jekris have a slight smell; with the Sobos the smell is more pronounced. Practically both Jekris and Ijos have no body smell unless they perspire freely: even then it is very slight and not objectionable, and certainly not so bad as that of an unwashed European. They rub the body with a bitter smelling nut which keeps insects off, and sometimes they use cheap German pomades and then smell very badly.

Childbirth.

Juju is made before and after childbirth. Among the Jekris only women attend women in labour. A woman in labour sits between the legs of a seated woman behind her, who massages the abdomen downwards and by exerting pressure helps the birth. Miscarriage is not common; but women often require skilled medical help in childbirth and succumb for want of it. As nearly all the natives think nothing of striking a woman, among the Jekris a pregnant woman always wear a small bell suspended from her neck, and as the bell announces her approach, room is made for her and she is not jostled nor struck. Women recover very quickly after childbirth.

Great store is set upon children, and the more children a woman has the more valuable she is: as the natives think a pregnant woman's milk will suffer, and hence also the born or unborn child if she do not leave her husband as soon as she knows of her state, it has become customary for a woman to avoid cohabitation with her husband for nearly three years after pregnancy.

Children.

Pure negroes when born are pink like young rats; at the end of about three or four months they become black. Teething children are allowed to cry

themselves quiet as in European hospitals and soon learn that crying is useless. They begin to walk earlier than European children. Rickety children are seldom met with.

Children of all three tribes are carried by being placed astraddle on the mother's hip. The child is then pushed round on to her back (its legs and arms clasping the woman's sides as much as possible), and in so doing the woman bends forward, pulls her upper cloth over the child's body, leaving the head free, generally lolling to one side, and ties the ends of the cloth high over her breasts; she then resumes her upright position and goes about her duties. A little girl carries a child on her hips.

Excepting in the case of twins every care is taken of children. Mothers rub their babies with their cheeks or mouths but do not kiss them; they lay the babies on their backs on the ground and lying down beside them dangle articles before them and fondle them as in Europe.

Children practically do as they like.

Twins are killed and their mothers turned out of the town and left to die in the bush. The natives say a woman must have been unfaithful to her husband or must have done something very bad to have twins. In the eyes of natives it is quite unnatural to have twins.

The children of a chief by a female slave are free born; the children of a female chief by a male slave are slave born. The children by a free man of a free woman in pawn are slaves until she has redeemed them by a special payment, whereupon they become free.

The son-in-law gives his father-in-law a "dash" (*i.e.*, present) on the birth of the first child.

Marriage (Jekri).

The sexes fall in love with one another just as Europeans do, and there is the same intrigue, squeezing and cuddling and loving embraces, but there is no kissing. Free girls are not given in marriage until arrived at the age of nominal puberty, *i.e.*, when the pubic hair begins to grow. Marriage consists in payment of a varied amount of cloth, gin, coral, etc., to the parents or brothers, sisters, or other guardian of the girl. Juju is made at the same time. A girl child can be kept for a man to be his wife when grown up; juju is made to keep her virtuous, but as a rule women are not chaste until married. Slave wives are bought. Most men have more than one wife, whilst chiefs have many wives, the last of whom is generally the favourite; the old wives act as servants.

A chief has as many wives as he can afford to buy. It is said no chief touches his women slaves.

When women are periodically poorly they are not allowed to sleep in the same house as their husbands, neither may they pass the fetish house at the entry to the village, but must enter by a bye-path.

Free born women must not smoke, eat nor drink in the presence of their husbands: slave women can do so.

Burial.

Jekris in mourning for a chief dance at intervals for a period of three to six months after the burial, the period extending according to the rank (power and riches) of the deceased. Towards the end of the mourning there is a biggish dance, then the women shave their heads and the mourning is over. Practically all relations, except the older men who don't bother to do so, shave their heads, and all equally dislike doing it. The dancing consists in making shufflings forward with the feet, a sort of slow polka step one foot at a time; sometimes they stamp with their feet and wriggle their backs and stomachs; they wear a kerchief round the stomach outside their other clothes.

Granville once witnessed a portion of a burial service at Egperiana. Thousands had assembled, but before his arrival the body had been buried already under a house. The daughters of the deceased chief, in rows of four each, danced up and down the compound clapping hands—one, two, three times, emphasis on the first; there was a band consisting of the usual drums, elephant tusk horns (which produced a tooting noise), a pressure drum and bells. The mass of the people looked on and talked. Every now and then an old man, probably a brother of the deceased, threw himself on to the ground on his knees with his legs thrown out sideways and dragged himself up to the burial spot, making flexions and gesticulations as though imitating a Mahommedan at prayers. The daughters and band sang in praise of the deceased.

Character (Jekri).

The Jekris could not understand why Felix Roth collected butterflies or flowers, and thought him foolish for so doing, but when it was explained to them that these served as patterns for the printed cottons they began to see some reason in the white man's doings! On seeing roads made, a Jekri remarked "that be proper place for walk," and on being asked why they did not make proper paths, he replied: "Jekri be fool too much, not got them sense for do that thing, he be lazy man!" They acknowledge that the advent of the white man has been conducive to their good.

They cannot read a picture until they have been taught to distinguish the figures, etc., and this takes them a long time to do; the diminutive size of the figures would seem to trouble their comprehension at first, for they say, "he small too much." One wife of the King of Benin, brought down to Warri, understood pictures, and delighted to look in them for children—she had none. Women pick up picture-reading quicker than the men. They soon learn how to use a knife and fork. Many Jekris are now able to walk up and downstairs, but Sobos and Ijos are still very clumsy at this. In going up they will take, say, one step while trying to take two, then when they have got up two or three they look round to see how it is they have got so high; then they take or miss a step or two and bark their shins and look round again. Coming down is much worse, and but for

the rails many would come to grief, as they have no notion of judging the distance to the next lower step. They put one foot forward but not downward, neither do they bend the standing leg, hence they paw the air and swing round towards the rail in a most awkward manner.

When fighting they claw each other and strike with the flat of the hand. Hence, when struck with a fist in the face the first time they do not immediately grasp the fact that the opponent has given the blow, but look round to see where it has come from.

If a European argue with them they immediately think he is angry. When quarrelling the men have a trick of suddenly rushing for their opponents' feet, catching them and tripping them up, and thus laying them on the ground.

The first time Felix Roth entered a Sobo village he shot a bird, for which the chief wanted to fine him. He declined to pay, but threw some threepenny bits in the air for which the chief scrambled with his people. They kicked each other's shins and got bruised, and then wanted the white man to give them a present to make good the damages they sustained.

The Jekris are most persistent beggars: and a chief will beg for everything he sees and even demean himself to asking for an old shirt, although he may have plenty of good ones at home. A native begging for medicine was told he must pay for it the same as he did for anything else. To this he replied: "Mr. Dotty (*i.e.*, Doctor) you be fine too much" (meaning you know too much); he then put his head on one side, clasped his hands flat together as if in prayer, and begged worse than before until threatened to be kicked out, whereupon he jumped outside, off the verandah, laughed immoderately, threw his arms about, held his sides, lifted his legs in an exaggerated imitation of walking, bent his back and indulged in contortions generally, exclaiming in the most good-humoured way possible, "Mr. Dotty, you vex too much."

They are extremely good natured, but very grasping, and although they are given to immoderate laughter they are not emotional and do not display their feelings. They have a natural politeness which is very striking, and a consideration in delicate matters which is not often met with elsewhere. They cannot be called intelligent, but they are mentally superior to the Sobos and Ijos.

The Jekris have great respect for their chiefs, fathers, and old age generally; in fact public opinion is very strong on these points.

The women of all the tribes are modest, the Jekri women particularly so. The wife of the King of Benin washed in the river in front of the consulate at Warri until shown the bath room, with which she evinced the liveliest satisfaction; her apparent indifference previously was due to the court etiquette at Benin, where every one appearing before the king had to do so in a state of nudity.

Women when they quarrel accuse each other of immorality, although after marriage they are as true to their husbands or masters as Europeans.

If they do not understand anything they quickly give up thinking about it.

The chiefs allow their slaves to steal, and then take the proceeds of the theft.

All the people seem to be great thieves, although native women when living with white men never steal nor allow their relations to do so. The thefts of the natives appear to be the outcome of the same mental weakness shown in their excessive laughter—they are unable to keep their hands off anything, whether of value to them or not, so that the thieving appears more to take the form of kleptomania on a large scale.

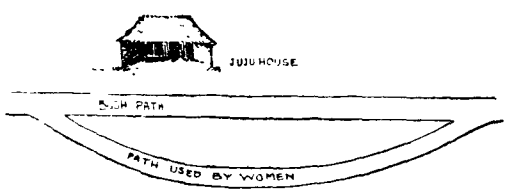
Juju.

The Jekris maintain that with their juju they can find anything you hide. When they fail they say they can, however, tell, in case one's relations at home are ill, whether they will die or not. Repeated failures, nevertheless, do not convince them of the worthlessness of their juju.

Juju-houses in the middle of the compounds have one side quite open and contain all sorts of things, such as clay and wooden figures, broken gin bottles, cowries, beads, wooden plates, palm oil, kernels, bones and skulls of monkeys, dogs, cats and birds, plants, etc. These things are arranged on raised platforms or steps; many of the articles hang from the walls, but everything is whitewashed. Of the many juju-houses seen, none contained anything which could be considered valuable.

The jujus of all three tribes are met with everywhere, in the villages, rivers, bush and bush paths. Apparently the Jekris are greater believers in juju than either the Sobos or Ijos. On the river, as one nears the village, one observes little palm-leaf roofed houses, supported on four, six or eight poles, placed on the banks or in shallow water. These houses contain, hanging in the centre, a piece of white baft or cloth, white being juju for these as well as for the Bini people. On the ground there are broken plates, empty bottles, canoe models, etc. Figures are found in the Sobo, Ijo, and Bini houses, but not in the Jekri houses; the figures are of clay or wood, with the organs of generation always excessively developed. Juju is performed before commencing any business such as house-building, fishing, fighting, marriage, childbirth, boat-building, or indeed any undertaking whatever. What they do or what they say we do not know, but some gin is poured over the articles in the house whilst the rest is drunk by those making the juju.

On the bush paths at the entrance to a town there are generally juju-houses, built like the dwelling-houses with clay walls, some of the Jekri and Sobo juju-houses being very large. These houses are not actually on the main path to the village but on a side path, and as women, when periodically poorly, are not allowed to pass a juju-house, there is a detour path as shown in annexed sketch.



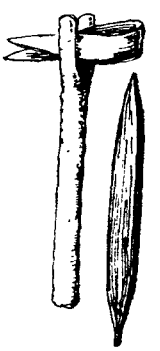
The placing of a canoe in a juju-house on the river side, as above referred to,

means that if any spirit of a disease come that way it should go back in the canoe.

Every year all three tribes make juju for the town—to preserve its health, to prevent death and war, to maintain friendly relations with the neighbouring villages, to keep on good terms with the consuls, to bring good generally to the inhabitants. The people dance and scream and play and drink gin, some of the latter they sprinkle about the place (figures, walls, etc.).

When men and women have made juju they sometimes paint themselves quite white and leave the paint on until it wears itself off, which it will do in five or six days. As they do not wash in the meantime they get pretty "high." Others put simply a white mark on their faces, such as a dab of white on the forehead, or on both cheeks, or white rings are marked round the eyes, the object being to let their friends know they have been making juju.

When natives on their way to market pass a juju-house, they speak to it (? the spirit) in quite a friendly way, and promise it something on their return if they shall have traded well. On their return they throw down a banana, or plantain, or some nuts or some small thing they have purchased.



Jujus also safeguard property. When a man has been collecting, say sticks or nuts, and is obliged to leave them, he gets a stick, splits it at one end, fixing the other upright in the ground near his belongings; into the cleft of the stick he places a doubled up leaf. Anyone who removes an article thus protected will surely die.

The Ijos have a sort of annual water juju. Hundreds of canoes paddle after two or four men swimming in the water. These men have frames fixed on to their shoulders, 2 feet high and about 3 feet wide, like the roof of a house; the frames are covered with all sorts of coloured cloths. The men sink and emerge slowly, which is a source of great fun to the paddlers.

For several years Felix Roth did not suffer from fever as did the other Europeans. This led many individuals of all three tribes to conclude that he possessed some special medicine, which they pestered him to sell them. When, on his return from the Benin Punitive Expedition, he suffered severely, he maintained the reputation of the medicine by stating he had run out of it and hence had got ill—and the natives believed him! He had at one time a dog which he had taught to sit up and give its paw to the natives. This procedure was very uncanny to them, but they thought the dog would make a good fetish and tried to buy it.

The influence of juju cannot be better exemplified than in the belief the natives had in that of the late King of Benin. The Jekris said to the last the British would never take the city because the king's fetish was too great, and that the king could not possibly be caught as he would turn himself into a horse, dog, or bird, etc., and so escape. When they heard the king had been captured they

said: "White man be god man, we no savey them white man; white man pass all other man, palaver set" (*i.e.*, it is no use arguing any more). The Sobos declined to believe in the capture until they were shown the captive king at Warri. They shook their heads and said nothing—it was all beyond them. Both Jekris and Sobos now acknowledge that the king's juju is finished, but go on believing in their own as heretofore.

If during illness a European doctor requests that for the sake of warmth the patient be covered with a cloth, his request will not be complied with, because in case the patient die the cloth would become juju and could not be used any more.

Their name for God appears to be *Oreshé*. Their religion seems to consist of "making their fathers." The chief's dead father has always a house in which gin, tobacco, clothes, etc., are continually kept for his use.

The following may possibly be a case of "Long Juju," *i.e.*, a central juju which has greater power than the local surrounding jujus from whom there is appeal:—

About ten days from Warri, there is said to be a big round hole full of water and surrounded by high banks; it is full of alligators and water-snakes, and has been in use for ages as a means of ordeal. Supposing two men have accused each other of doing wrong things, to settle the statements, they pay some money to the juju-men and are taken to this hole, put into a canoe and upset. If one of the two get ashore alive, he is supposed to be honest; if both succumb, both are dishonest; if both get out alive, both are honest. All three tribes are said to use this ordeal. Granville heard of what appears to be another version of this juju. At Ugélé, where the Sobo king lives, there is a small strip of water 4 yards wide. The accused tries to swim over, and if he is a liar and no true man, he drowns, the water opening up and swallowing him. If, on the other hand, the accused is a "collection of virtues," the devil (consisting of crocodiles, snakes and alligators, the latter with diamonds (? glass) in their heads which shine at night) takes him to the bottom of the water and ties strips of cowries round his wrists and ankles, and bells round his body, arms, legs, etc., telling him he can sell these things in three months' time for chop (food), and then the man comes up. Granville has seen men and women coming from Ugélé one mass of beads.

The sasswood ordeals are as follows. When two men dispute they go to some sasswood man, who rubs the sasswood on the lobes of their respective ears. He then takes a pin and tries to pierce the lobe; if it won't go through the lobe of the man accused, the accusation is false; if it go through, the accusation is true. This is a Jekri and Sobo ordeal; the pin is generally the sharpened rib of an umbrella. The following is a Jekri ordeal. The bark is stripped off the sasswood tree and made into a mash. Both parties to the dispute (generally about some statement or misstatement) kneel down in front of the tree and eat the mashed up bark, first the accused, then the accuser. When the eating is finished, the two men return to the town and walk about in the largest open space available. They both take an egg in each hand, the eggs having been previously rubbed in sasswood, and are the

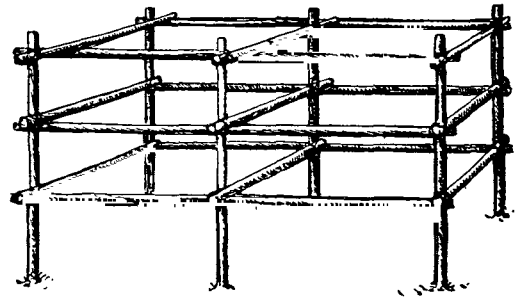
juju part of the ceremony. The man who has made the misstatement dies while the one wrongfully accused spews up the sasswood.

Food.

The food of the three tribes is very varied, viz., cassava, yams, papau, ground nuts, pineapples, bananas and plantains, palm oil, palm kernels, Indian corn, okra, cocoanuts, oranges, cattle, goats, sheep, dogs, cats, fowls and eggs, wild fowl, bush deer, dried fish and shrimps, land and sea crabs. But the staple food is cassava. The cassava is scraped until the white portion shows; this portion is then scraped on a scraper or knife and made into a pulp from which the juice is well squeezed. This pulp is put into a clay or iron pot, water added, and stirred up until it forms an opalescent mass called *fu fu*. The Jekri then takes a handful, makes it up into a round ball about the size of a small man's fist, dips it into palm oil and swallows it. The Sobos and Ijos after squeezing the pulp bake it dry in pots and put it in the sun until it looks like a lot of crumbs, when it is very hard and brittle. It is then eaten by handfuls with a lot of dried fish or shrimps. The Jekris grow most of the cassava and sell it to the other tribes.

The Jekris preserve cassava dry in leaves. The natives are very fond of starch, and Europeans suffer much theft on this account.

Yams, on account of their comparatively high price, are only eaten by the richer people. Yams are considered poisonous when freshly dug up, and are therefore stocked for future use, just as we do wine in bottles. In both the Jekri and Bini country is this done. The racks are 5 or 6 feet high, of any length, and made of wood lashed together with *tī-tī*. The yams are placed in the pigeon holes so formed, and being preserved from contact with one another, dry well.

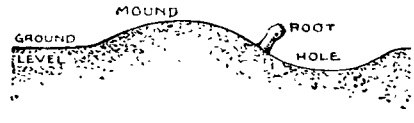


Except fish and shrimps, which are smoked, all food is cooked. They decline milk, but will eat butter, cheese and all varieties of sweets.

Perhaps it is on account of the vegetable diet and comparatively small amount of meat they get to eat that they will eat high and putrid flesh when they have the chance so to do.

Cultivation.

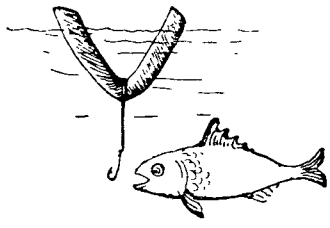
In the dry season clearings are made by barking the trees to kill them, and not by cutting them down. Small holes are dug to obtain the soil for making the small mounds into the sides of which the yams and cassava roots are stuck, thus: This is done just before the rainy season sets in. The roots are dug up at the end of the rainy



season. Cassava and yam plantations are generally placed near the villages, on both sides of the paths leading from one village to another; there are also paths round and through the cultivation patches.

Fishing.

The Ijos are the fishermen; they fish at the river mouths, and the fish and shrimps caught are dried in the sun until they stink. These people make their own nets either of stringy grass or of the mid rib of a palm (obtaining many strings from one) or European twine and rope. Fish are also speared at night, the fishing spears having loose points, or enclosures are made along the banks which are closed at high tide, the fish being taken out or speared at low water; this method is varied by pegging out a shallow at high tide, and fixing up mats wherein the fish get caught. At certain periods the mouths of the creeks are blocked and the fish stupefied with the juice of the cone of a plant, which does not affect the flesh; from one to a dozen cones, each about 3 inches long, are found on a single branch of the tree and when the cones are bruised they exude a yellow liquid which stupefies the fish. Shrimps and small fish are also caught in large open flat-bottomed baskets, much as we catch lobsters and crabs in England; a bait is fixed inside and it is covered with a net having a small opening, the whole being sunk for 12 to 24 hours. Shrimps are also caught by the natives running along the banks pushing an open basket in front of them which scrapes against the bank.



The Ijos also fish with a hook attached to a piece of string about 1 foot long, which at the other end is attached to a bent float, so that when a fish gets hooked the bend is drawn down while the two ends bob up and down and show above the water that a fish is caught. (In the diagram the hook should be in the fish's mouth.)

Hunting.

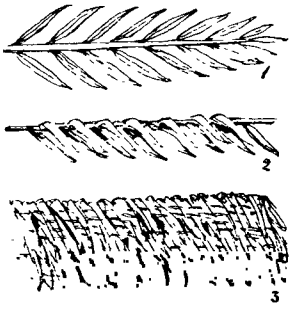
The Sobos hunt the bush deer with dogs, spears, long Danes (flint-locks), traps, etc.; for small deer, very often a hedge 1,000 yards long is set up between the bush and plantation with small openings about 20 feet apart, and behind the openings traps are set, the traps being springes. For large deer single traps like wire springes made of one or more flexible trees are set up on the path from the bush to the plantation; the game get caught by the neck.

Habitations.

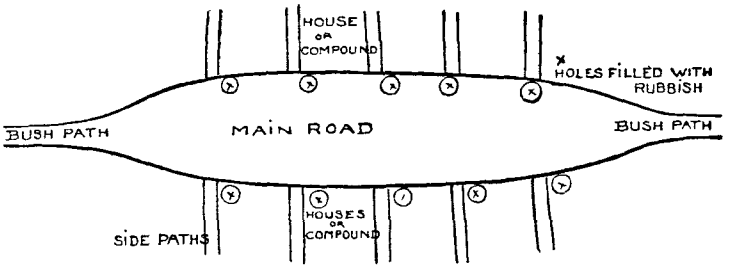
Most Jekri towns are built on high land near water, not on a main river but on some winding creek, so that the town is hidden completely and can only be reached either from the creek or by means of a narrow bush path. The big chiefs have compounds of their own, generally oblong in form, the sides of the compounds being formed by rows of huts, or by one long hut divided into rooms, with entrance

opening into the compound. The chief occupies one of these huts and his wives and slaves the rest. The entrance is at one end of the compound, and one has to enter either through the huts at that end or through a big doorway, the wall of which consists of posts bound together. At one end of the compound is the palaver house, with the side towards the court of the compound left wall-less, the roof being supported on posts. Sometimes the palaver house as well as the small juju-house is in the middle of the compound.

The houses are built of about eight tall posts, three on either side, and two taller ones in the centre at the gable ends to support the ridge pole; all the posts are forked at the top to support the side beams. The walls consist of thin sticks placed about 9 inches apart, strengthened by cross pieces all lashed in position by *tī-tī*—a thick strong round native creeper—or by strips of so-called cane made by splitting the stems of the oil palm leaves. The spaces between the sticks are filled in with puddled clay. This is allowed to dry, and when cracks appear they are filled up with more clay and the drying allowed to go on again; cracks again filled up, and so on until the walls are considered perfect. Clay is found everywhere at various depths below the soil, and is therefore readily dug up. Some houses are washed over with a red clay which is dug up from the holes whence the building clay is obtained. The roofs of the houses are generally made of the leaves of a palm which grows at the mouths of the rivers whence they are brought up in canoes. The leaves (1) are first folded over (2) and then three tied together (3) with *tī-tī*, and laid in the sun until quite dry, when they form the thatch to be put on the roof.



The arrangements of the compounds are not always the same for the Jekris do not always live in compounds. For instance, in some towns the houses are built anyhow, while occasionally, although rarely, a long street runs right through the place. The Sobos and Ijos build their houses like those of the Jekris, but often the Ijos are nomads; the latter make the walls of their houses of mats. Sobo houses are generally inland, and the bush path opens into a broad main road at the entrance of the town, contracting into a bush path again at the other end. Houses and compounds open on to this main road. At both ends of the town the houses have loopholes for watching arrivals. The diagrammatic plan of a Sobo town is given in the accompanying sketch.



In the towns or villages of Jekri, Sobo or Ijo there are big excavations, close to the main road, from which the clay has been taken out; these holes get filled up with rubbish and dirt from the houses. Plantains and bananas are planted between the houses of all three tribes, and if any settlement is at all old, huge coco palms are always found there.

The Jekris and Sobos and occasionally the Ijos raise the earth about 2 feet inside the house at one end or side, and on this embankment they place a mat or two for sleeping purposes; during the day it is used as a seat or table. The richer natives have tables like those of Europeans.

Some natives have truck beds made of long canes lashed together and raised on four forked sticks.



The cooking fires are made in huts close by, but in cold weather, or if the owner be rich, a fire is built in the middle of any house. Iron pots are used and very often native clay ones, which rest on three lumps of clay, the ground being hollowed out between the three lumps. Some natives dig a hole in which to make the fire.

Ijo houses are built on the main river bank and can be seen from the water; there is no order as regards their position and the towns are therefore built very irregularly.

Dress.

The Jekris do not twist or plait their hair. The men cut it shortish and the women dress theirs with a comb, smoothing it down by pulling a handkerchief half way down over it.

The men wear a cloth and singlet. The women wear a smaller cloth (*ālego*) tied round the hips with a handkerchief and then a larger cloth over it, covering them from over the breasts down to their feet; this cloth is kept in position by tucking it in under the left arm. In no other tribes are the women so well covered as among the Jekris.

The Sobo women wear anklets of sections of elephant tusks, a short concave one on the right leg and a longer straight one on the left leg; such anklets weigh probably eight or nine pounds each.

Skin marks.

The skin markings consist of short straight ridges made with a sharp piece of hoop iron by successive operations. The skin is slightly cut and some soot (?) rubbed in; the wound is left to heal, and in doing so a very faint ridge remains. After a time this ridge is cut into and some more pigment put in, and the operation repeated until the ridge has been raised to the usual size. As the people grow old and the skin shrivels these ridges become more marked, unlike scars, which of course become less marked.

The Jekri men disfigure the skin occasionally, the women mark it generally.

The Sobo men are generally without skin mutilations, but the women adorn almost any part of the body, having mostly a necklace of cicatrices and three cuts on the left temple. The Ijo men put the marks on any part of the body but not quite so much as their women do.

Circumcision.

All boys are circumcised in all three tribes, whether free or slave, and the operation is performed at any age, on babies a few weeks old, or on young fellows 15 or 16 years of age.

All Sobo women have their clitoris cut off; unless they have this done they are looked down upon, as slave women are who do not get cut; as soon, therefore, as a Sobo woman has collected enough money, she goes to an operating woman and pays her to do the cutting. The bleeding is sometimes very bad, and is stanched by a decoction made from leaves, bark, and sticks ground up. After the cure, the woman rubs a reddish-yellow colour over her body, from which it wears off in the course of a few days.

Government.

In all three tribes the head of a village is generally either an old man or a man who has the most worldly goods; there is no hard and fast rule. Amongst the Jekris he is generally the richest man; amongst the Sobos the oldest man; amongst the Ijos the headman must be an old man. The Jekris have a head chief for the whole tribe; but the richest man is the most looked up to. The Sobos have a king somewhere in the back country, but he cannot be of much account, as the King of Benin used to send down his men to any Sobo village and just take whom he liked, either freemen or slaves, for his yearly sacrifices. Even now some Sobos will not believe that the King of Benin has been smashed up. The Ijos are widely distributed over the Niger Delta, fight a good deal among themselves, and are the hardiest of the three tribes.

The people are well treated by the chiefs, and chiefs will occasionally pay the fines imposed on a son when the father cannot help in order to save the family from disgrace.

Slavery.

Amongst the Jekris, if a slave run away, steal, or misbehave himself generally, one or both ears are cut off; for adultery with a wife of a master he is killed, according to native law.

When the British Government established the Niger Coast Protectorate a proclamation was made that domestic slavery would be tolerated, but that slaves imported from other districts would be declared free. For a time it was not an uncommon sight at daybreak to see one or more slaves sitting round the Warri Consulate flagstaff awaiting freedom. Such men were freed if on investigation they made out their case, and they were allowed to go away or to remain in the Protectorate working for wages.

To indicate that a slave is a bad individual, the Jekris cut a diagonal cross × above each nipple on the breast; perpendicular or horizontal cuts indicate that the slave is not very troublesome.

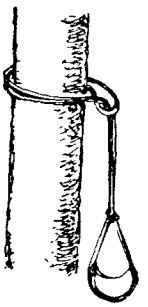
Not many Jekris are free; generally it is only the chiefs and their families who are free, the rest of the people being slaves. A chief can free a slave. Fathers who are hard up will sell, or rather pawn, a son for a puncheon of oil, say, the son is then, for the time being, a slave, but is redeemable. Similarly, a man or woman can pawn him or herself, and on repayment of the loan become free again.

Succession.

Amongst the Jekris, if a man dies intestate, which means that before dying he has not called a meeting to say how his property is to be divided, it is apparently divided between his sons and daughters. The dead man's wives are taken by the sons, if young, as concubines, the elder women being kept about the place. If the man be rich, the women do nothing, if not, they must work. The Sobos and Ijos inherit property like the Jekris. Very often a rich man, before dying, decides that a certain son, no matter whether an elder or a younger son, shall inherit all his property, and in such case the daughters are taken care of by the favoured son as head of the house, and when married he then receives the "dash." Generally speaking, not the eldest son, but the son adjudged to have most sense, *i.e.*, the fittest to succeed, is made heir. Descent is through the father.

Palm Oil.

The Sobos make the palm oil. They climb the palms by means of two kinds of slings placed round the trees: they rest the foot in the one, and in the other they place their hocks—they rest on one sling and raise the other with their hands, doing the reverse when coming down; the slings are made of strong *tī-tī*, twisted like manilla rope: they are very strong and stiff, and therefore easily moved when in use. The nuts grow in bunches between the leaves, black at first, but red when ripe. The bunches when cut are dropped down into the bush and left about in heaps till the nuts drop out; they are then collected and put into a V-shaped wooden trough placed on an incline with a small hole at the lower end. The troughs vary in size from 10 to 20 feet long, and from 2 to 3 feet deep. Water is poured over the nuts, which are allowed to soak or rot a little, then two, three, or four men (according to size of trough) stand in single file and jump on the nuts with their heels, the men sustaining themselves by means of sticks stuck into the ground on both sides of the trough, grasping a stick in each outstretched hand. As the oil gets pressed out of the outer shell of the nuts it floats on top of the water and is skimmed off, the water being run out through the hole, while fresh water is occasionally added. The nuts are then put into the sun, and when dry the





women and children crack them with a piece of iron on a piece of hard wood, to get the kernel, and these in the trade are known as palm kernels.

The men, one or two, take their wives and children into the bush, build huts, make troughs, dig a well and work there as a family party ; in wandering through the bush one may come across several such parties. Palm oil nuts are carried on a stick across the shoulder, but, otherwise, heavy weights are carried on the head.

Trade.

The Sobos supply most of the palm oil and kernels and the bush deer. The Jekris buy most of the fish from the Ijos and are the great middlemen and traders.

In counting, the fingers and toes are used; the chiefs can count better than the mass of the people.

Manufactures.

The Sobos make fairly neat baskets, mats, etc., and also carve wooden figures ; some of the Ijos carve paddles. Neither Sobos, Jekris, nor Ijos appear to make cloth, but the Bini people do. Gourds are said to be hardened for use by soaking in water and the seeds shaken out when dry.

Weapons.

Sobos and Ijos have spears with iron heads. Spears were not seen amongst the Jekris, while the wounds dressed appeared to have been made by slashes with the *machetas* and were not spear thrusts.

Pottery.

Jekris, Sobos and Ijos make earthenware pots. They dig a hole in the ground and pick out a bluish sort of clay which they knead, and from which they throw out all hard pieces. The clay is worked up into rolls about 6 inches long and 1 inch in diameter. A shell or rounded piece of wood or of old pot is procured and the clay moulded on this, the sides of the coming pot being made by squeezing the clay with the thumb inside, and by superimposing several of the prepared rolls, while the whole is twiddled round with the left hand, the right hand doing the shaping—fingers and a wet cloth are brought into use. The ornamentation consists of lines and dots but not of figures. The pots are put in the sun first for a short time to set, and are usually burnt, about six at a time, in a row;

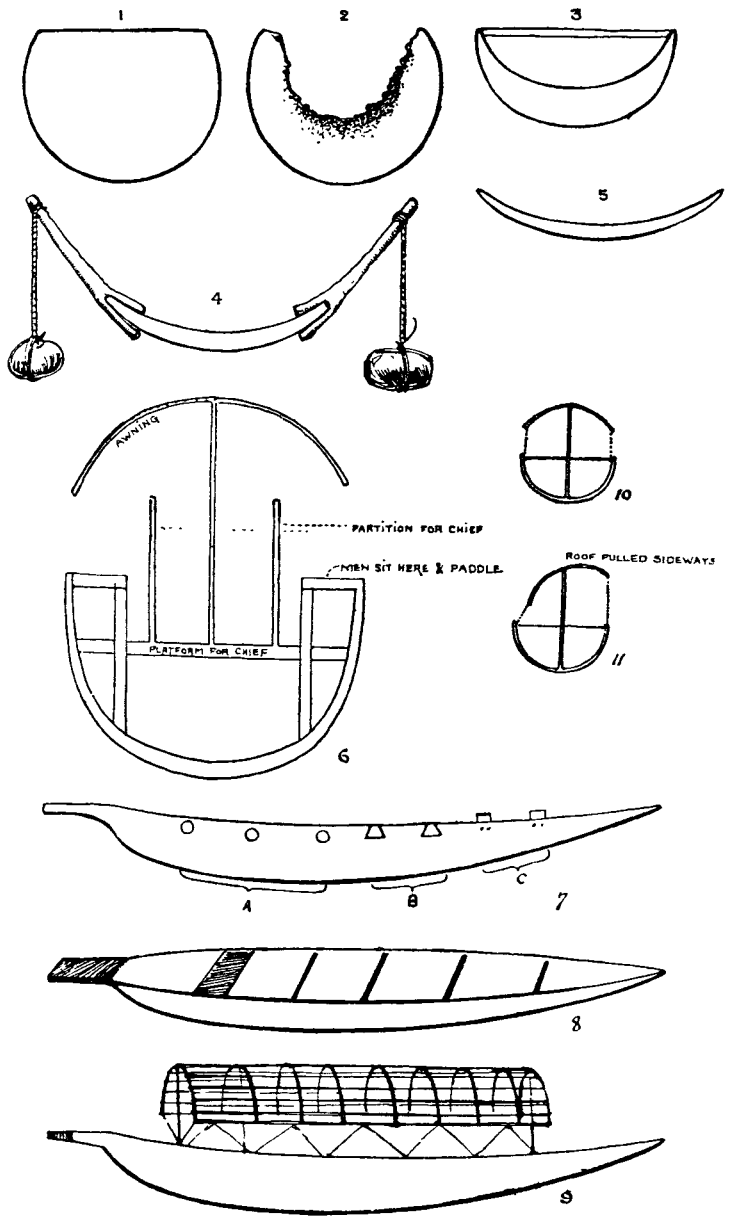


VARIOUS FORMS OF POTS MADE.

good dry brushwood is laid over them crossways and set fire to; some of the pots crack from the irregular drying. There is always a lot of charcoal about from the previous firings, and this helps to retain the heat round the pots.

The soil at Warri consists of 3 to 12 inches of loam, below this to a depth of about 72 inches there is a sandy yellow clay more like sandstone, and below this depth the clay is found to be more putty-like in character. In this putty-like clay small white spots like chalk are met with, also red clay in small lumps, and a grey or blue clay in similar lumps; the pots are made of the blue clay.

Canoes.



The Jekris do not make the large canoes (6); they are brought down from the interior. The smaller canoes are made of the trunk of a particular species of tree. When the tree is felled the trunk is trimmed for the outside shape of the canoe (1). A fire is then lighted on the uppermost flat side (2), the charred wood removed and a cross stay inserted (3); forked twigs are set with the fork on the sides and a weight at the other end so as to help weigh down the sides (4); this process is repeated until the canoe is thoroughly opened out (5). One end of the canoe is shaped into a fine

bow, while the stern end is left flat, and on this the steersman stands (7, 8 and 9). Towards the stern end a broad seat is fixed, on this clay is plastered and on top of this again is placed the fire for cooking the food. The canoes are also provided with small flat sticks for the paddlers to sit on. These sticks are let into circular holes (7*a*), or put in wedge-shaped (7*b*), or laid on top of the bulwarks (7*c*), but in all three cases they were originally lashed into position by means of *tī-tī;* they are now secured by nails, when obtainable. Large canoes are provided with awnings (9, 10, 11). A series of straight sticks are set up along the centre of the canoe and lashed to the seats. On top of these uprights a long semi-cylindrical framework is placed and the framework covered with mats. The framework can be tilted more or less to either side, and so kept in position by the yards with which it is furnished.

Whole families live in their canoes and travel up and down the river, but always wait for the tides and are never in a hurry to go anywhere. The chiefs have big canoes with plenty of small boys paddling; these they keep going for sometimes as much as twenty hours at a stretch. The boys often fall asleep and off their seats, and if they do not paddle properly a man hits them on the head—the boys being generally slaves.

Diseases.

In spite of their rubbing themselves with a strong smelling nut the natives are much bothered by mosquitoes and varieties of blow flies, but being naked they can generally feel when a noxious fly has settled on them and knock it off. However some flies deposit their eggs in the skin and cause much itching but not much sore. Chigoes, if allowed to remain, very often cause the tops of the toes to drop off. Worms small and long are met with, and the Guinea worms are probably introduced.

Malarial fever, dysentery, diarrhœa are common; so is "craw craw," eczema, and all the chest complaints; valvular disease of the heart, pointing historically to rheumatic fever, is not uncommon; slight cases of leprosy exist, and ulcers of the leg are very common. There is a curious, but severe diseased state during which the skin and flesh wastes away, but it is curable. A troublesome complaint, because there appears to be no cure for it, is this: the skin splits round the base of the toe and hardens gradually to such an extent that the circulation is stopped and the toe withers away.

The form of smallpox which affects the natives more or less severely is not found to communicate itself to Europeans.

Epilepsy and hysteria are met with. There is very little ophthalmia.

Toothache is only caused by deterioration due to enamel being knocked off by a blow; the jaws being large and the teeth wide apart, nothing gets fixed between them. The teeth even of middle-aged people are well worn down by the gritty nature of their food.

Albinism is found in all the tribes, but no polydactylism, steatopygea, cleft palates nor hare-lips were observed. Idiots exist, but no special attention is paid to them. There is occasional baldness in old people. Club foot has been seen.

Sanitary Matters.

The Sobos are the cleanest in their towns, but do not keep themselves personally clean except on juju and state days; they also wear little clothing. The Ijos are always washing themselves, and as one passes through their towns the women are seen doing the hair of men or of other women. The Jekris are not very clean in their towns, but keep themselves personally cleaner than the two other tribes; being middlemen they are generally wealthier and consequently dress much better. All three tribes oil themselves.

In consequence of the poor nourishing quality of their food the people have to eat more than Europeans do, and consequently they defecate more frequently. As regards sanitary arrangements nearly all villages are on the water-side so that defecation takes place direct into the water. The Ijos have long poles jutting out over the water supported on forked uprights for use as closets. One Sobo village was noticed where by common consent a portion of the bush appeared to have been allotted as cloaca. The smell of urine only occasionally makes itself felt about a village.

The Jekris make refuse heaps of waste food, etc.

The Jekris rinse out the mouth and rub the teeth with the fingers after eating; all tribes are to be seen with the "chew stick," a fibrous stick about half an inch in diameter, which is skinned, chewed and spat out, an operation which is performed every morning to keep the teeth clean.

As the native uses his left hand to clean himself after defecation he eats with his right hand, shakes hands with his right hand and offers things with his right hand—the right hand being the clean hand.

Pathology.

If a native man (or woman) is suffering from a pain or swelling he nearly always makes incisions on the skin over the affected part something similar to European cupping.

A wound is allowed to heal from the bottom up, as the natives have no idea of sewing it up. Generally they make messes of chewed leaves, the pulp from some trees, cow dung, etc., which mixture they put into the wound; the mixture is left there until it stinks too much, when a fresh mess is put on.

With broken arms and legs they use, when possible, rough splints, but no trouble is taken to ascertain whether the limb is properly set, nor is any means taken to keep the limb at rest.

The Jekris believe in the Ijo doctors and go to them for treatment. When native methods fail the natives come to European doctors as a last resource.

A peacock's feather is stuck over the house of a person who is ill.

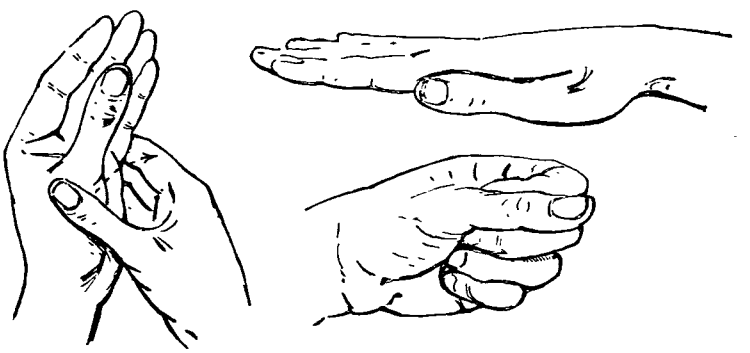
Salutations (Jekri).

When handshaking as they withdraw hands they click with the fingers on to the ball of the thumb.

If an inferior meet a superior the former goes down on his left knee, slaps his leg above the knee, holds out his hand, which his superior grasps, the superior at the same time raising him up. As they withdraw hands they click.

A chief never allows a native below him in rank to have the latter's umbrella open before him (the chief), so an inferior closes his umbrella on approaching a chief, while the chief keeps his umbrella open.

In begging they rub the flat palms of the hands together much as Europeans hold their hands when praying.



If displeased, as in a court case, they close the fingers of the left hand to a cone, and with the thumb of the right hand pressed over the ball of the thumb of the left hand they click the right hand thumb on to the inside of the left hand.

If pleased, they slap with the right hand on to the closed fist of the left hand; when many do this at the same time it sounds like a lot of nuts being cracked.

Games (Jekri).

The children have miniature bows and arrows.

Boys have a game very much like peg top. There is a long thin convolute shell which they spin from the point with the fingers of one hand into a small hole about 1 inch deep and about 2½ inches in diameter. The other boys then come and spin other shells into this one, so driving it away and leaving theirs to spin in its place. Boys also play at shooting, being at a distance of 5 yards, one boy being placed at each end of the shoot.

A woman's game is to choose a bare piece of sandy ground in which an armlet is hidden and the sand smoothed over the surface. The armlet is to be found by others, who with one or two bent fingers drag across the sand in hopes of finding the article.

In wrestling, they grip each other at the back of the neck with one hand and then with the other try to grip under the opponent's arm and close, throwing the opponent on to his back. There is no throwing the opponent over the shoulder, etc. Before the match they grease themselves well.

Expression of Colour (Jekri).

Black, *dudu;* white, *fufé;* red, *dĭdé*, practically anything not white nor black; yellow is not recognized as a colour; green, *égo* (accent on the *o*), often it is spoken

of as *dudu*. The word *égo* is not used by itself, thus to say *egĭ* (tree) *égo* (green), a green tree would not be understood; one must say *egĭ to mu égo*, literally, "tree which catch green." Paint is known by the name applied to tar, *ŏda*. To say "green paint," they say *ŏda to mu égo*, tar which catch green, but for red paint they say *ŏda dĭdé*, tar red.

Mensuration (Jekri).

The majority of natives count up to ten on fingers and toes, and probably not one per cent. can count up to two hundred. In some respects the names of the numerals are both peculiar and complicated. Thus, for 71, they say *okalogwad orui* =one past 10 in front of 80, and for 76 they say *mayonétcheto orui*=four not reaching to 80.

Language (Jekri).

We have seen above that there are many Portuguese words still in use by the natives; they also adopt English words such as *ujeli*=goal, *bŏtor*=button, etc.

Some words have to serve reciprocal purposes such as *ko*, to teach or to learn; *fé*, to look for, and to find.

In many cases the one word has to serve for two meanings, as *fo*, to jump or to fly; *igwe*, to wash or to swim.

Often one word appears to have two meanings, but it is pronounced slightly differently according to what is meant, thus: *ugugu* (dental)=ghost; *ugugu* (labial) = crocodile.

There are a large amount of compound nouns such as *onietomuru* = carrier, lit. *onié*, person; *to*, who; *mu*, carries; *uru*, things; *peja*=to fish from; *eja*, fish; *pa*, to kill.

The pronoun is inflected and *not* the verb, thus: *mo ri*, I see; *ma ri*, I shall see; *m-oku ri*, I have seen.

The pronouns.	With Verb.	As Negative.
1 person singular—*mĭ, mo, ĕmĭ* ...	*mo*	*mé*[1]
2 „ „ *ūr, wo, ré* ..	*wo*	*wé*
3 „ „ *on, o, ro* ...	*o*	*é*
1 „ plural—*ené*	*ené*	*ené*
2 „ „ *ūr, wo, ré* ...	*wo*	*wé*
3 „ „ *anga*	*anga*	*angé*

[1] é = ay, thus: *mé* is pronounced *may*.

Language.

Gi. Verb Active to say.

Indicative.	Present.	Past.	Future.	Negative for all three tenses.
Singular 1 ...	*mo gi*	*moka gi*	*ma gi*	*mé gi* } do not say; have not said; will not say.
„ 2 ...	*wo gi*	*woka gi*	*wa gi*	*wé gi* }
„ 3 ...	*o gi*	*oka gi*	*a gi*	*é gi* }
Plural 1 ...	*ené gi*	*enoka gi*	*enar gi*	*ené gi.*
„ 2 ...	*wo gi*	*woka gi*	*wa gi*	*wé gi.*
„ 3 ...	*anga gi*	*angoka gi*	*angar gi*	*angé gi.*
Imperative ...	*gi* say	...	...	*magi*—do not say.

The ordinary Jekri greeting is *wo wunora*, lit. you live, *i.e.*, you are well. To a stranger they say *oluka wa*, friend, come! To ask "Who is that?" they say *uor nisi*, lit. you who.

The verb *shé* appears to be a sort of auxiliary, it means make, do, be, thus: *anenon shé ré* (*uor*), lit. sorrow does you, meaning you are sorry.

There is practically no interrogative; "Do you see?" is expressed by *wo ri* lit. you see; and to be emphatic they will say *uor, wo ri*, lit. you! you see! meaning hi! you! do you see?

Canoe Boy's Songs.

1. *Onéyé owo mo ré ra shé oluka Oné to ré owo. Té*
Onéyé trade I go buy do friend Onéyé who went trade. You
gibé mi Onéyé té gibonon Onéyé. Owo mo ré ra
not tell me Onéyé you did not tell me Onéyé. Trade I go buy
shé do ohowo.
do goodbye trade.

The meaning of which is that a woman has gone to trade without telling her friend that she was going, *i.e.*, she played her false.

2. *Obirihé Obirihé Otoror owa mĭ ré né mĭ obi mo gi*
—— —— —— father my go send me up country I said
ma ré obi Otoror owa mĭ ré né mĭ obi
not I (want) go up country —— father my go send me up country.
Sobo Quon o lu bé mĭ éju é éyé Ogbi ausén Obirihé.
—— —— he hit (to?) me eye —— —— —— good ——

Explanation of Plates VI to X.

Plate VI.

Figs. 1 & 2.—Jekri paddles, probably made by Ijos.
Figs. 3 to 8.—Handles and staves of paddles.

Plate VII.

Figs. 1, 3, 4, 5.—Incised calabashes.
Fig. 2.—Poker-work calabash.
Fig. 6.—Fly whisk (from Benin ?).
Fig. 7.—Bell shaped iron rattle.
Fig. 8.—Kruboy flute.
Fig. 9.—Silver bracelet made by Jekris.

Plate VIII.

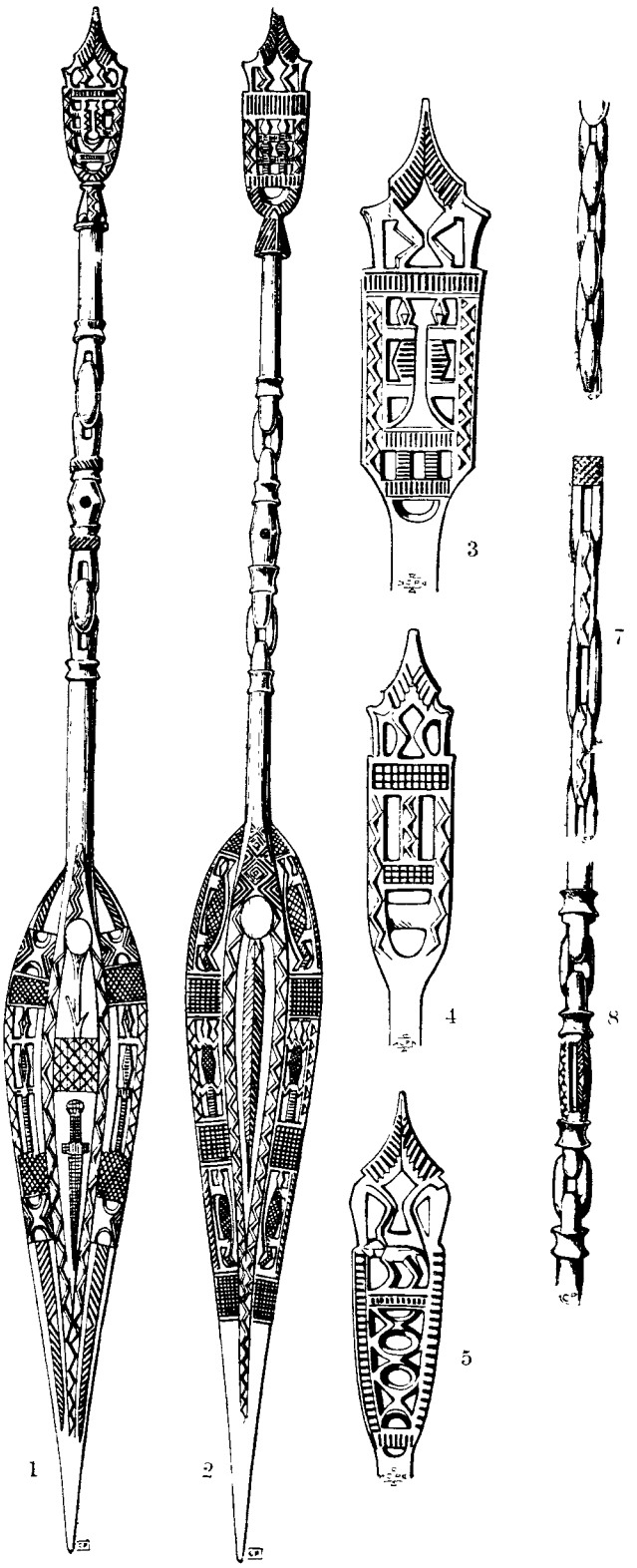
Fig. 1.—Jekri canoe head-piece.
Fig. 2.—Juju worn by Sobos on head (at dances ?).
Fig. 3.—Juju worn by Jekris on head (at dances ?).
Figs. 4, 5, 6.—Jekri drums.

Plate IX.

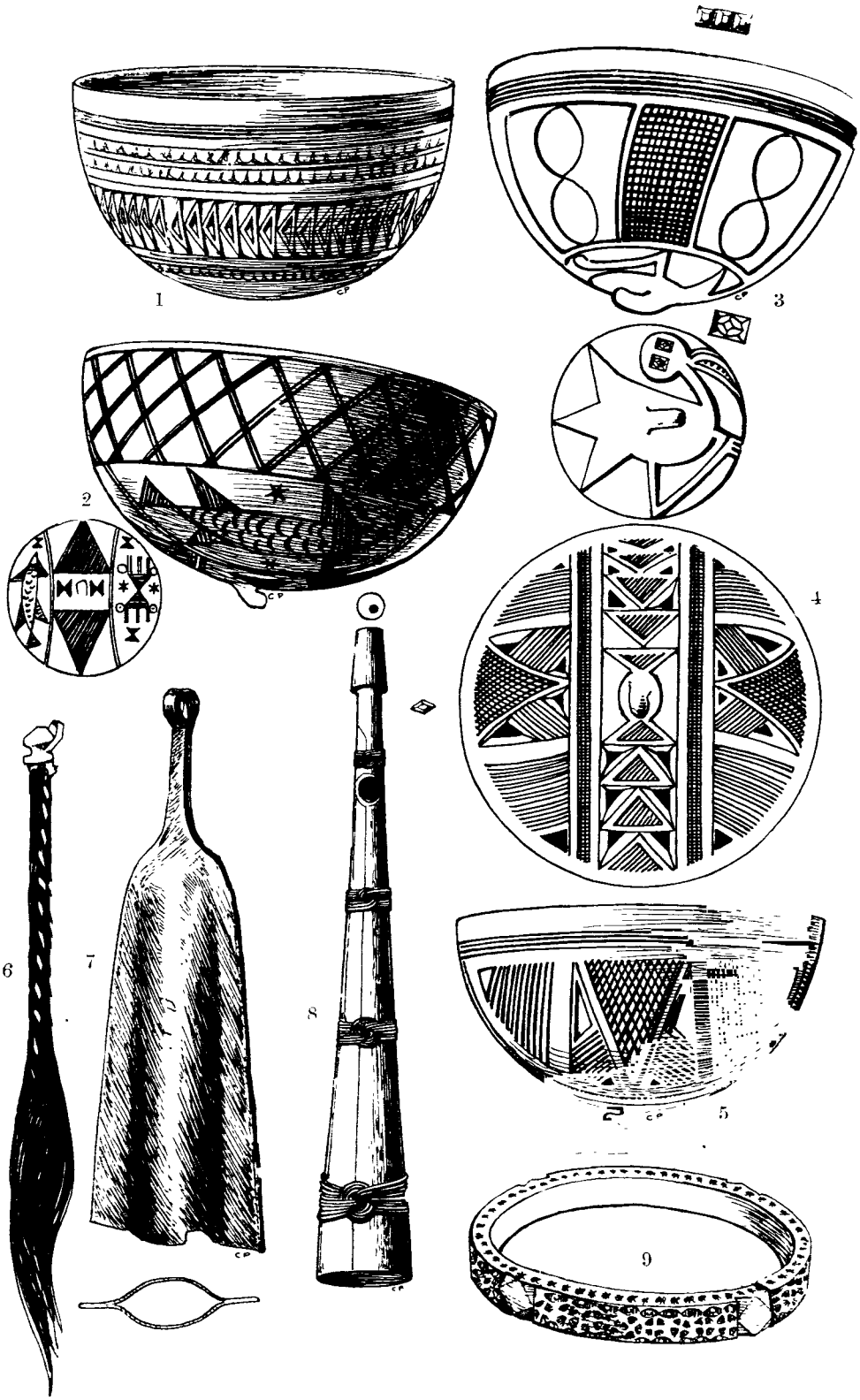
Fig. 1.—Ijo juju.
Figs. 2, 3, 4.—Jekri wooden combs probably made by Ijos.
Figs. 5, 6, 7.—Sobo wooden combs, probably made by Ijos.
Fig. 8.—Wicker comb, Jekri.

Plate X.

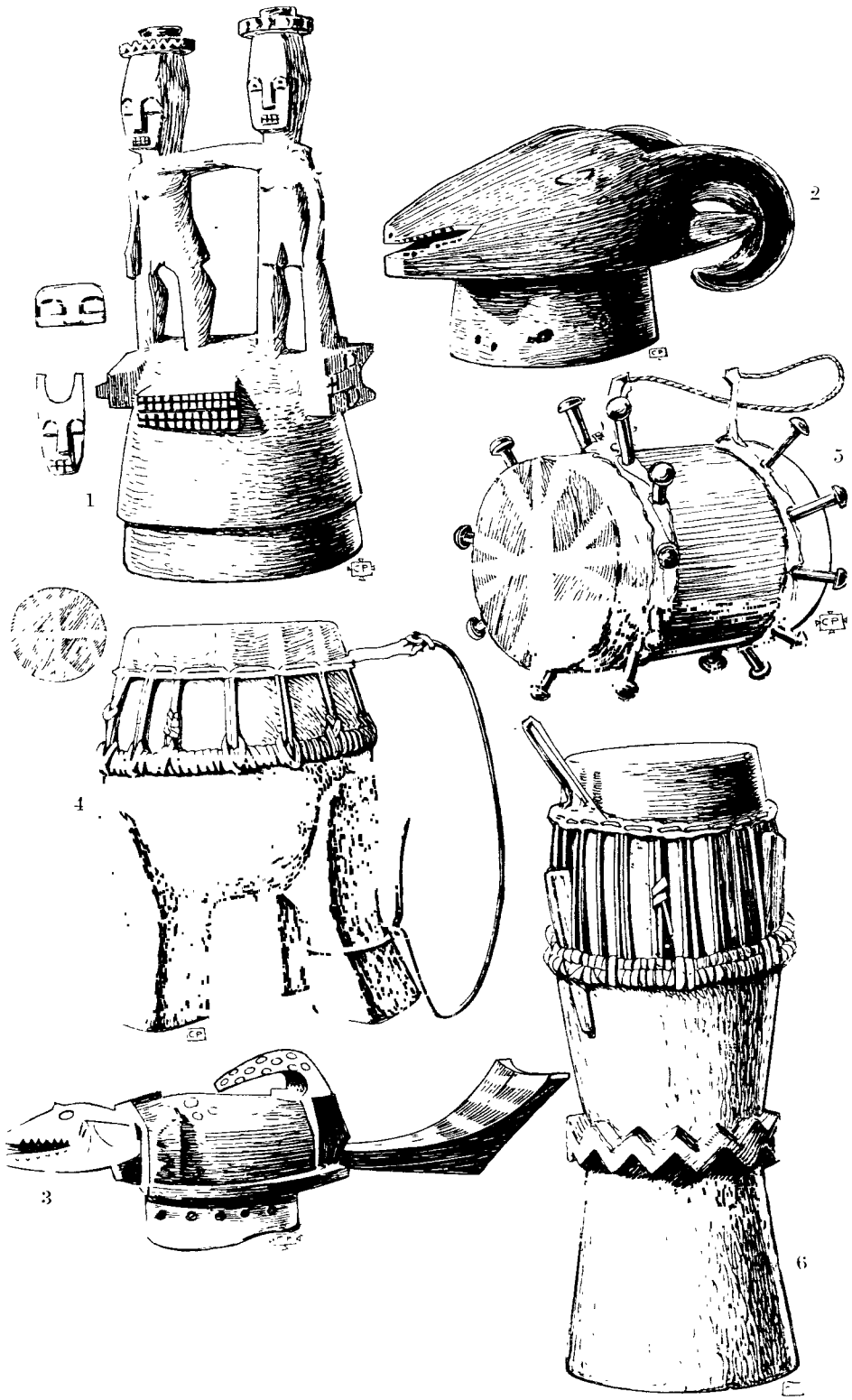
Fig. 1.—Benin rattle; some of the victims were said to have been stunned with this implement.
Fig. 2.—Warri fetish.
Fig. 3.—Yoruba knife.
Fig. 4.—Kruboy harp with calabash sounding board.
Fig. 5.—Silver ring made by Jekris.
Fig. 6.—Jekri fetish, made by Sobos.
Figs. 7, 8.—Calabash with poker-work pattern.



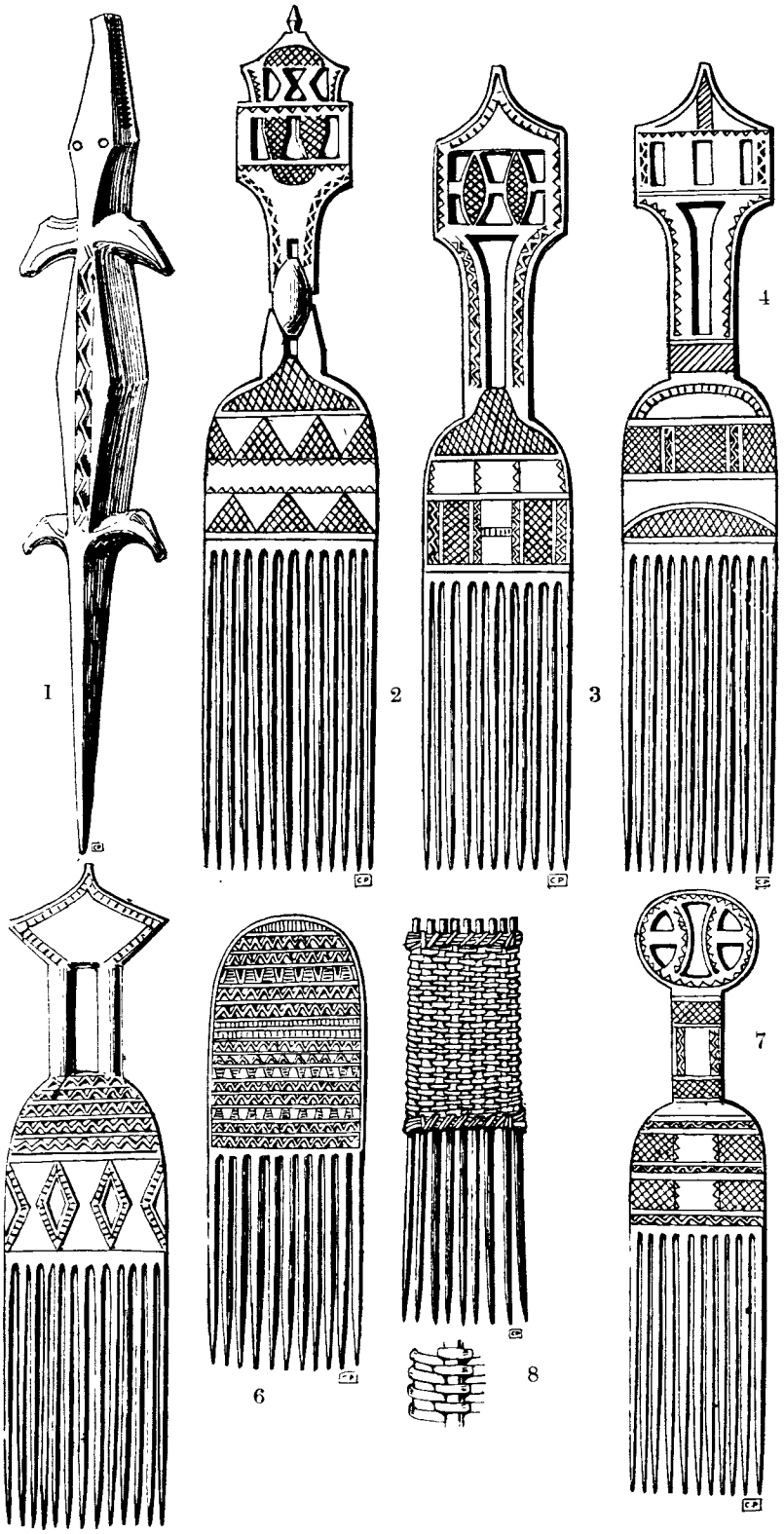
JEKRI PADDLES.



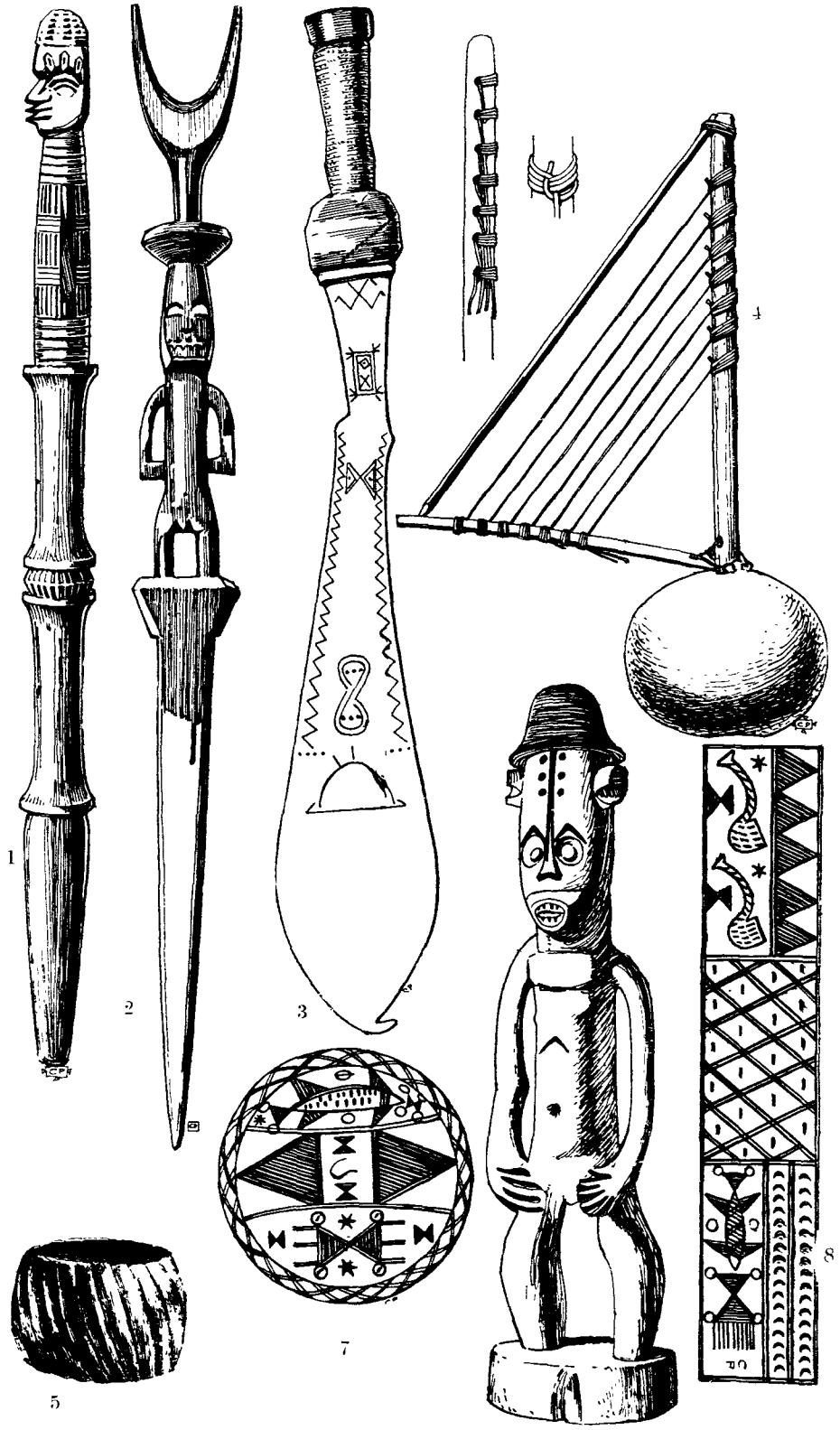
CALABASHES, ETC., FROM WEST AFRICA.



JEKRI DRUMS, JUJU, ETC.



IJO JUJU AND JEKRI COMBS.



OBJECTS FROM WEST AFRICA.

NOTES ON THE NATIVES OF TANNA.

By the Rev. W. Gray, Jamestown, S.A.

[with plate xi.]

In preparing the following notes I have taken as my guide the second edition of *Notes and Queries on Anthropology*. As it is three years since I left the Island of Tanna, I have not had the advantage of being on the spot where I could refer to the natives. I have, however, confined myself to matters within my knowledge, and trust the information I am able to give may be of some service to Anthropology.

The Colour and Character of the Skin.—The most common colours of skin are sooty black and a red copper tint. A few of the natives are almost black, but none of them are coal black. There are likewise some who are of a brownish white and others of a rosy white (10 of Topinard's list).

In young people and persons not subject to excessive exposure the skin is velvety. In those who have a strain of Maori blood it has an oily look. I have never seen freckles.

The Hair.—I have not observed any really black hair. Dark brown is the most common colour, but chestnut brown is nearly as common. Fair blond hair comes next in frequency and is the colour coveted. These are all woolly in character. Red hair is only found where there is a taint of Maori blood, and it is wavy in character. The dark hairs are soft in childhood and get darker with age. The blonds have flaxen hair in childhood. Nothing is done to produce curliness or the reverse, but many persons use lime to bleach the hair. The hair grows uniformly over the scalp.

I have never seen an adult Tanna man without a beard. Some of them have an abundant growth of hair on the cheeks, chin, and lips, while others have the billy-goat beard and little hair on the cheeks. Fair-skinned people are covered with fine downy hair, while those with dark skins have strong long hair growing thickly all over the chest, spine, and sometimes on the back of the shoulders.

It is difficult to say when greyness sets in, probably not before the age of 45 to 50 years. Baldness is rare. It begins above the forehead and temples and extends backwards. The Tanna system of dressing the hair has the effect of thinning it. Baldness in women is very rare.

Characters of the Face.—Considerable variety in the form of the outline of the nose, as seen in profile, occurs. On the whole the face is flat, but sunken across the eyes and root of nose. In respect to actual shape considerable variety also exists; in persons of fair complexion the shield shape form predominates.

The lips are always thick and everted, but to different degrees. The ears are small and fine.

Powers of endurance.—Tannese bear cold badly. They shiver and stay in shelter when the thermometer falls below 60° F. On the other hand, they can labour in the sun with head and body exposed for a long time. They drink seldom and go a long time without food. The voice varies a good deal. On the south end of the island there is a trill in the speech which is pleasant to the ear. On the east coast it is hoarse and guttural. On the north end and down the west coast the voice has a shrill metallic ring. By these characteristics one can tell the district from which a person comes. Excretory functions, so far as known, are normal, except that the Tannese perspire freely.

Odour.—There is, I think, a distinct Tannese odour. I could tell a group of Amityumese or Aniwarus from a group of Tannese by their odour. Single individuals cannot be distinguished in this way. To do so you need to get about twenty natives together, fresh from their village, who have walked a few miles on a warm day. Their odour depends upon a number of things, such as the food they eat, the smoke of the wood they burn, the material they use for clothing, the animals they keep, and the character of the soil on which they live. This odour is stronger in inland people than shore people, as the former bathe less frequently. The odour attaches more to women than men, due probably to the skirts they wear. If a dozen of these women pass through the room of a European house the odour will remain in the room for about twenty-four hours. I am not sure if natives recognise these odours; very likely they do.

Physical powers.—I have kept no record of weights lifted or carried, or the time taken to travel a distance. But as one brought up to manual labour and able to endure hard work, I have tested them alongside of myself. They could beat me at lifting and carrying a dead weight, such as shifting a stone, the end of a boat, or a box. A number of them will carry a very heavy case quite a long distance over a bad road. In walking, natives could do the journey easier and quicker than I could—they carrying a burden, I none. In steady pick and shovel work natives could do more than I could the first day. We were about equal the second day. On the third day they fell far behind me, and were unwilling to work.

The Senses.—Sight:—The natives can see a boat or canoe out at sea which I could see only with a glass, and they could tell a man from a woman walking along the shore nearly four miles away. Hearing:—I have never observed any particular acuteness in hearing, indeed I am inclined to think that they are behind Europeans in this respect. Smell:—I have not seen any evidence of particularly acute smell. In this I do not think they equal an average European. They dislike the smell of a foul ulcer, a dead animal, and bad meat. Over such smells they will spit and exclaim for a long time. Yet they will eat stinking human flesh and fermented bread fruit. The latter is to Europeans a most horrible smell. They are pleased with the odour of roast meat, savoury soup,

of a native oven just opened, the scented croton and European scents. Taste:—The native taste is quite different from the European. To us their food is at first quite unpalatable. Their foods are generally taken without salt. Pepper and ginger they dislike, so also anything sour. They do not take readily to sour fruits, but they take quickly to anything sweet, and soon cultivate a taste for salt and pepper in their food. Touch:—There is no evidence of acute touch.

Attitudes and movements.—Sleep: Women lie often without anything under the head. Boys and men hang the head over a wooden pillow or support about as thick as the forefinger, raised about 6 inches from the ground. The neck at the junction of the occiput rests on this, and the constant use of such a head-rest produces a corn across the back of the neck.

Men usually stand to micturate, women and children (including small boys) sit down.

Women sit up in being delivered and attend to themselves throughout.

The body has a graceful poise in walking, the toes are turned inwards and the foot planted firmly, but in running the toes are about straight. The gait is energetic and head carried back. Women when walking without burdens put one shoulder forward and then the other while the hand hangs free with the palm turned backwards.

They move objects by pushing and pulling, but the first effort is generally a push. Women carry a burden fastened on the back with rope brought from the bundle, across the chest, first one way then the other, like a man's braces. Two men carry yams, pigs, and cocoa-nuts between them on a pole resting on their shoulders. One man carries a load, such as cocoa-nuts, on each end of a stick on his shoulder, so that part of the weight is behind and part in front. It is considered undignified for a male to carry a burden like a woman; but women may carry a pig between them on a pole like the men.

Most natives can climb trees, but a few are giddy when they do so. In climbing a cocoa-nut tree the hands are put round the further side of the trunk, the feet are planted crosswise on the side of the trunk next the climber, and the body is kept clear of the tree trunk. Natives will climb an almost perpendicular cocoa-nut tree 60 feet high, with perfect ease.

Tannese have considerable power over all the muscles of the face and scalp, but I have not noticed whether they have the power of moving the ear. They are able to acquire the power of shutting one eye.

To indicate direction behind or at the side, a person points with his thumb, keeping the other fingers shut; the direction of an object in front is indicated with the open hand, the palm being kept in the direction intended to be shown. Beckoning with the hand is the very opposite of ours.

The sleight of hand tricks practiced are of the simplest kind, such as our use of the thumb to make a child believe that its nose is taken off.

Any object like a knife can be lifted from the ground with the foot and is even carried some distance by means of the toes before being transferred to the

hand. There is no indication of the great-toe being opposable like the thumb, but it stands clear of the next toe. The joints of the toes are bendable at will.

Heredity.—There is an entire absence of strict caste. I never saw a really distinct case of albinism or erythrism. I have noted that families accustomed to live in malarious places suffer less than visitors to such places from malarial fever. I am not inclined to think that S. S. Islanders swim readily through any hereditary influence; every child has to be taught to swim, but they are so accustomed to sea bathing from infancy that a child never knows fear of water, and can swim as soon as it can walk. While a little kitten a few hours old will keep its head above water, an infant (native) would drown at once. Tannese, and all natives, have a marvellous power of recovering from injury to the body. Excessive power of imagination is universal in the way of hearing sounds attributed to spirits—such as the tramp of the feet of dancers.

Crosses.—I have had no Tannese cross breeds under observation, but there is little doubt that the Tannese are no longer pure bred. At present, whatever may be the cause, the birth rate is very low. The best looking couples are childless, and families are generally small. It seems to be the feeblest and most unhealthy women that have most children. Yet there must have been a time when the mothers were most prolific.

Physiognomy.—Astonishment is expressed by an exclamation or series of them—Awe! Yakame! Kositen! The mouth is opened, the lips drawn back from the teeth, the tip of the tongue kept behind the lower front teeth and the body of the tongue forced against the upper teeth, the eyes are opened wide and the brows lifted, the arms are flung about as if the person wished to throw them away. A blush passes all over the face in shame. In indignation a man scolds and turns and walks defiantly away. In thinking deeply the whole skin of the face is drawn towards the eyes. In despair there is a relaxing of all the muscles of the face. In good spirits the face is clear and childlike. Contempt is expressed by shooting out the lips and forcing the spittle through teeth and lips, and by putting out the tongue and rolling it about with a noise like children make with the tongue, also by wild unnatural loud mocking laughter. Disgust is expressed by contortions of the face and spitting. Fear is shown by exclamation (Awe!), shrinking back, blanching of the face and the straightening of the curliest hair. Laughter may be carried to the extreme of tears. Inability to do a thing is expressed by lifting one or both shoulders up about the neck. Children are extremely self-willed and pout much as white children do. Guilt is recognised by the individual shunning the person wronged and by apparent unconcern when taxed with wrong-doing. Jealousy can be detected by the look and manner. Assent is expressed by a vertical nod of the head, or lifting the eyebrows. Negation is expressed by the lateral shake of the head, firm pursing of the lips, lifting of the hand and waving it palm outwards toward the person speaking.

Psychology.—Tannese are capable to a small extent only, of an abstract idea. The faculty of mental attention is easily wearied although patience is an out-

standing trait. The memory is good for experimental incidents. I do not think a native could draw a map of an island. A man has no idea of his own age, and the only way he can give an idea of it is by speaking of some marked person who lived when he was a boy. Most natives are polyglots and speak more than one dialect. Some natives show no aptitude in learning a foreign language, but as a rule Tannese learn foreign languages readily, though they do not always pick up the intricacies. Perseverance is a marked feature in native occupations, but very little gift is displayed in acquiring a foreign habit. A man will fish day after day though he get nothing. Plantations are made in spite of successive failures of the crop. They are deft carvers in their own rude fashion. Curiosity is not excited if the new object be very complicated. Yet a chimney and weather vane has created immense curiosity. Their own sacred stones excite a keen desire to see them, while the sight of them fills them with horror. Curiosity is limited by the power of understanding an object, and its use. A barometer is a useful thing—it tells what sort of weather is coming. A raingauge is a foolish thing—what does one want to count the rain for, when there is so much of it? On the whole, curiosity is strong. It can hardly be said that there is any sequence of ideas properly so called. If a person were passing along a path and some creature (say a snake) fell on him out of a tree, and next day, or the week after, he heard of the death of a son in Queensland, he would connect the two. A turtle came ashore one night and laid a nestful of eggs. It was captured in the act. Such a thing had never taken place in the memory of the people. The conclusion was that Christianity was the cause of the turtle coming ashore to lay its eggs, and the right thing to do was to offer the turtle to the missionary who had brought the worship of Jehovah. I have, however, had evidence of natives having a true sequence of ideas, but of a simple character, and born of experience. I cannot think of a better instance just now than shaping the end of a canoe so as to ride over the water or part it without shipping the sea; also the custom of keeping the outrigger to the windward in sailing. I have seen more abstract instances, but they were not separable from education and European influence. The native's mind is so constituted that there is to him no absurdity in believing what are, to us, two absolutely contradictory things. A native can think of both as true. A large number of things retard progress in acquiring habits of civilised life. Their own manner of life is good enough in their idea. Native customs die hard, and are connected with their religious beliefs. While there is a measure of incapacity, there is enough capacity to easily make a beginning in the acquisition of civilised habits. Civilisation of natives *in situ*, though slower, is unquestionably sounder than the civilisation of natives in a civilised country. Tannese who have been in Queensland for fifteen or twenty years return at once to savage ways. Civilised customs introduced *in situ* are, however, modified by native surroundings, but the effect is radical. Civilisation got abroad is little more than a veneer. We have never had a case of a child taken from Tanna to be trained and educated as a civilised child, but some light on the question may be gleaned from the fact that boys and

girls taken home by missionaries, have turned out very unsatisfactory. They have become conceited, lazy, and put on "airs," and in some cases have gone back to savage life and heathenism. Without much hesitation, as the result of observation, I venture the opinion that there is a limit to the native capacity for education, and that capacity is a low one. It would be impossible to take an average native boy, as one would take a boy from our back streets, and give him an university education. Probably the standard of a State school Fourth Form would be the highest education possible for a native boy. Indeed, it is questionable if he could be educated to pass in all subjects in the Fourth Form. To attempt more would almost certainly result in some form of insanity or death. In making implements and tools the Tannese copy exactly their ancestors. No improvements are made on these. Tannese take a long time to make up their minds, and are easily talked over to some other resolve. As a whole they are not voluble of speech, and repeat themselves in speaking. The same explanation will be given over and over again to the same persons. Tannese are capable of deep emotion, but they have marvellous control of themselves. A person will be furiously angry and never show it. If it suits him to make a display of his anger, he can do so in a most terrifying manner. They are subject to illusions and make a good deal of clear dreams. I have not heard of or seen a Tannese in a trance. Idiots are not uncommon, but insanity is rare. Suicide is not infrequent—chiefly through grief or hopeless and painful illness.

Explanation of Plate XI.

Group of three Tanna men; from a photograph taken in Tanna, in 1893, by the Rev. J. H. Lowrie, Presbyterian Mission.

MAY 24TH, 1898.

F. W. RUDLER, Esq., F.G.S., *President*, in the Chair.

The Minutes of the last Meeting were read and signed.

The election of J. W. SMALL, Esq., of Jaffna, Ceylon, as a Fellow of the Institute was announced.

Professor E. B. TYLOR, D.C.L., F.R.S., read the three following papers:—

1. "A Description of the Totem-Post from British Columbia, now erected in the grounds of Fox Warren, near Weybridge."
2. "On two Haida House-Posts with Totem Carvings in the Pitt-Rivers Museum, Oxford."
3. "Remarks on Totemism, with especial reference to some modern theories respecting it."

The discussion was carried on by Mr. ANDREW LANG, Mr. H. BALFOUR, and Mr. E. CLODD.

A hearty vote of thanks was passed to Professor Tylor on the motion of the PRESIDENT, who also thanked Dr. Garson for exhibiting some illustrative lantern slides.



TANNA MEN

ON THE TOTEM-POST FROM THE HAIDA VILLAGE OF MASSET, QUEEN CHARLOTTE ISLANDS, NOW ERECTED IN THE GROUNDS OF FOX WARREN, NEAR WEYBRIDGE.

By Edward B. Tylor, D.C.L., F.R.S., Professor of Anthropology in the University of Oxford.

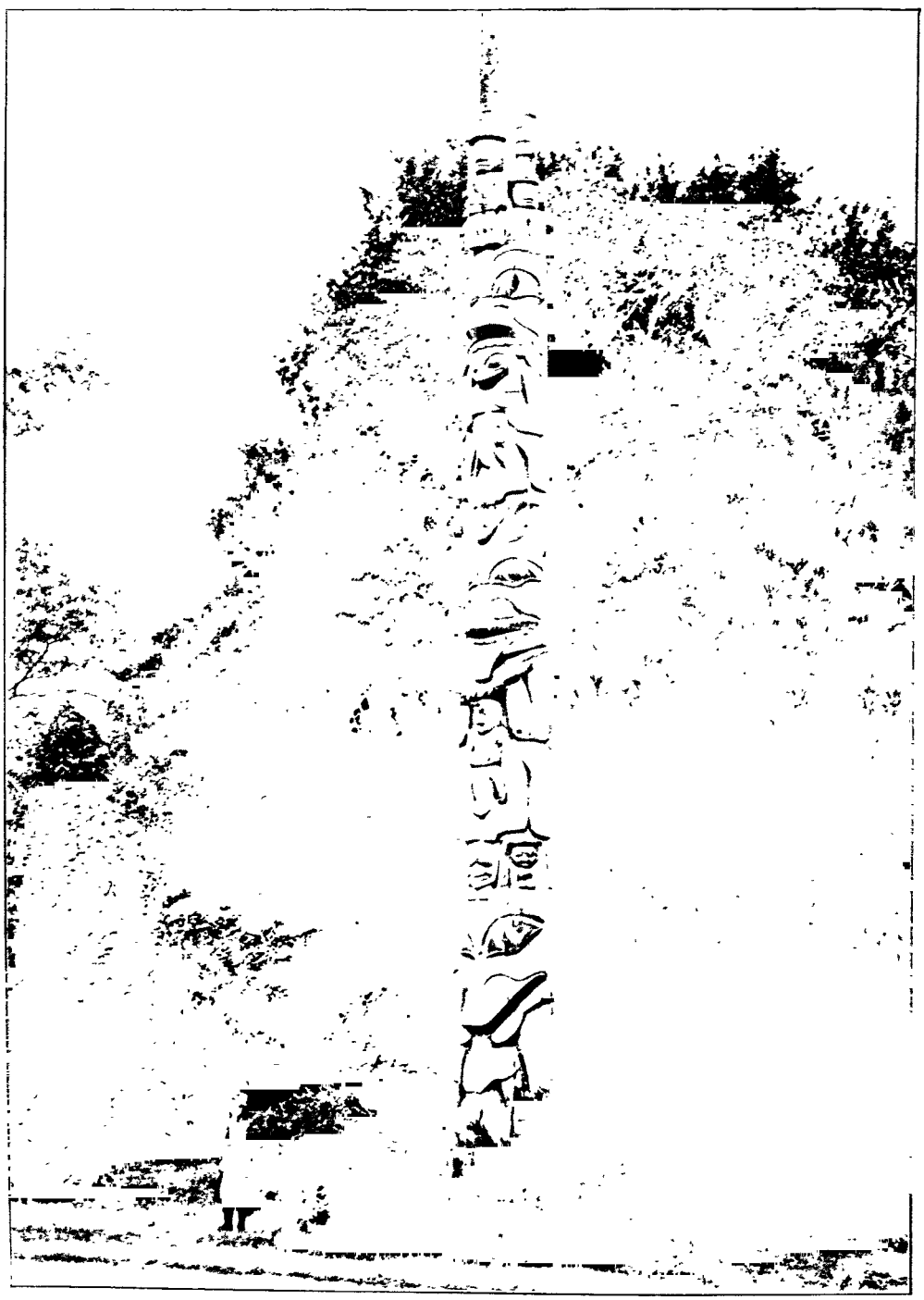
[with plate xii.]

In the beautiful grounds of Fox Warren, near Weybridge, the residence of Mrs. Charles Buxton, there is set up a monument contrasting curiously with the surrounding landscape. This is one of the huge totem-posts of the Haidas, the sculptured trunk of a cedar, now rising 41 feet from the ground as shown in Plate XII. It is understood to have been more than 10 feet longer, but the lower end embedded in the ground was sawn through about the ground-line, and the upper portion, supported by an iron framing, now rests on a foundation of concrete. As usual, the front part is carved, the back being hollowed out so as to reduce the heavy labour of raising the post into its place. In a Haida village, native houses have such a totem-post erected centrally in front, often with an oval opening cut through near the base serving as a door. With these totem-posts and the memorial posts of the dead, a view of the villages has been compared to a harbour with its masts seen from a distance, or a pine forest after a great fire. Among the most remarkable of such villages now standing is Masset in the north of Queen Charlotte Islands, whence the post shown in Plate XII was sent over some years since by Mr. Bertram Buxton. No other example of the wooden sculpture of the North-West Americans of dimensions comparable to this is to be seen in England, so that it is desirable to place a figure of it on record for the use of anthropologists, with such account as is available of the meaning of its designs.

The Haidas are socially organized on totemistic principles. They are divided into clans named after animals, etc., which again fall into two clan-groups named after the Eagle and the Raven. The Eagle group has as totems the eagle, raven, frog, beaver, moon, duck, codfish, waski (a fabulous whale), whale, owl. The Raven group consists of the totems wolf, bear, killer-whale, skate, mountain goat, sea lion, tsemaos (a sea monster), moon, sun, rain-bird, thunder-bird. It must not, however, be considered that this grouping as it stands is of remote antiquity or original invention. For though the Haidas are so closely connected in race language and religion with the Tlingit of Alaska that both may be taken as slightly varied branches of the same stock, the pair of groups, Raven and Eagle or Raven and Wolf, have a different arrangement of totems, and the curious anomaly that among the Haidas the raven totem belongs to the Eagle group and

not to the Raven group is not found among the Tlingit, who put the raven totem in the group of the same name. Other reasons seem to indicate that the totem system of the American tribes, while spreading over this part of the continent, has undergone various alterations in accommodating itself to local circumstances, and even taken new lines of development. It has fully maintained its social importance in binding together the members of clans in close union by the tie of birth. Every Indian looked for and found hospitality and protection in a house where he saw his own totem figured, and if he were taken captive in war his clansmen would ransom him. Clearly discernible also is the effect of the law of exogamy in compelling intermarriage between the groups, thus holding the whole people in solidarity. But while the usual tracing of clanship is by descent on the female side, some follow the male line, and among the Haidas themselves customs of adoption cause combinations of clanship. On the religious side, the animistic theories of the Haidas have led to a special development of the totem theory. It is to be clearly understood that the Haida and Tlingit (as also the Tshimshian and Heiltsuk) do not consider themselves, as is so common in America, to be descendants of the totem. The Tlingit hold that souls of ancestors are re-born in children, that a man will be born again as a man, a wolf as a wolf, a raven as a raven. Notwithstanding this the kind of animals which belong to the clan as totem or crest are counted as their relatives and protectors, as when Indians of the Wolf gens or group will pray to the wolves, "We are your relations, pray don't hurt us!" There are rules against eating the totem animals, but apparently not against killing them; an Indian of the wolf totem goes wolf hunting like any other man. The notion usual elsewhere that the connection between the totem species of animals and the totem clan of men is one of mixed generation or creation or somewhat of the sort between animals and men is, among these tribes, replaced by the doctrine of a human ancestor having had an adventure with some mythic or divine being by which, in gift or commemoration, he acquired the totem or crest which became hereditary in his clan. It seems not unreasonable to consider this a special modification of the totem theory, made to fit with the belief in family descent by means of transmigration of ancestral souls. This doctrine of the totem myth is the key to the interpretation of such totem monuments as that which is now under consideration. It is not enough to identify the animals represented as totems, but recourse must be had to the episode of its origin, which the sculptor commemorated in a way familiar to the Indian mind.

The post is surmounted by a group of three sitting figures, whose rank is shown by their wearing the so-called "chief's hat." The original form of this head-dress may be the native basketry hat, which passes into a wooden helmet surmounted by a cylindrical turret, the number of divisions (*skil*) indicating the wearer's rank or dignity, and being said to represent the number of potlatches or feasts given by the wearer. It is now only worn in ceremonial dances, but its representation is frequent in paintings and carvings. It may be this kind of hat which is referred to in the Tlingit and Haida deluge myth, when the uncle of the divine



HAIDA TOTEM-POST AT FOX WARREN.

Yētl, challenged by him in vengeance for the slaying of his brothers, made the waters rise over the earth, but kept himself up by means of his hat, which grew higher as the waters rose, till Yētl, flying up to the sky, pressed down his uncle's hat and drowned him. It has, I think, been supposed that the three figures represent builders of the house or chiefs dwelling in it, but the view of the village of Cumshewa on the east side of the island as given in Dr. G. M. Dawson's report, shows several totem-posts surmounted by the tall-hatted group, which therefore seems to have its meaning in some myth of general acceptation, though no observer has been able positively to identify it. It is worth while to make this remark, though inconclusive, as it may lead to the native story being ascertained. While the Indians regard these carvings as historical records to be received with unquestioning faith, it must be remembered that they cannot convey the complete story, which must be gained from oral tradition. The group next below shows the Bear with the cub between his paws and eating a Frog. Below this scene is the often-repeated group of the Bear and Hunter. Toivats the Hunter once went to the house of Hoorts the Bear, who was away, but his wife was at home and the hunter courted her. The Bear came home and finding her in confusion, accused her. In spite of her denials the suspicious Bear, when she went for wood and water, tied a magic thread to her dress, which he followed up till he found her with the hunter, whom he forthwith killed, as is shown in the sculpture. In these pictographic scenes, the same mythic personage reappears in various characters. Thus in another totem-post figured by Judge Swan, Hoorts the Bear is seen keeping guard when Tshing the Beaver is eating the old Moon, and the Crow goes to fetch the new one. At the base of the Fox Warren post, below two other figures is seen the Wolf, in connection with which some lines perhaps belonging to the Killer-Whale have been noticed by Professor Boas, who has examined the photograph of the post, and may before long have an opportunity of questioning the Masset people about those of its details which are still obscure.

Explanation of Plate XII.

Haida Totem-post erected in the grounds of Fox Warren, near Weybridge, Surrey.

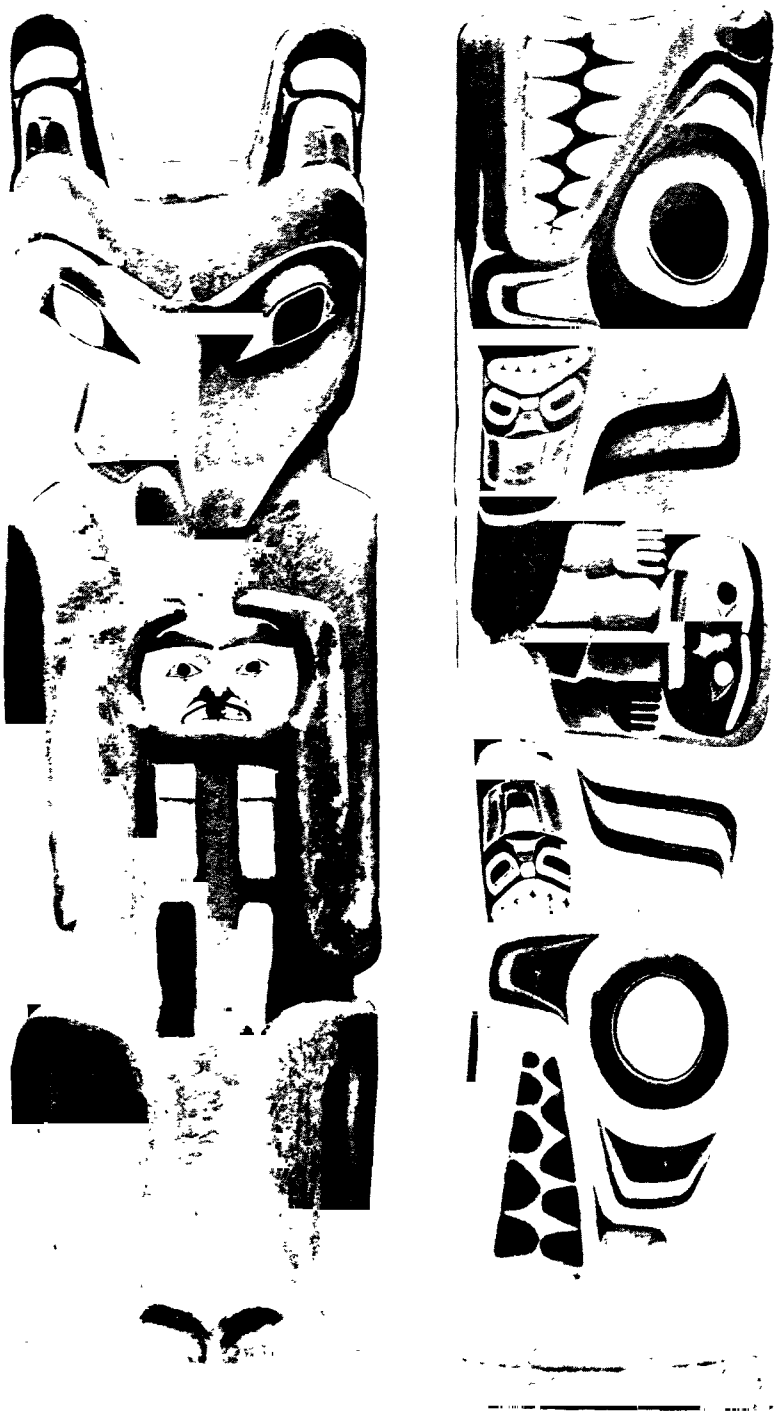
ON TWO BRITISH COLUMBIAN HOUSE-POSTS WITH TOTEMIC CARVINGS, IN THE PITT-RIVERS MUSEUM, OXFORD.

By Edward B. Tylor, D.C.L., F.R.S., Professor of Anthropology in the University of Oxford.

[with plate xiii.]

The two house-posts represented in Plate XIII, were sent over from British Columbia in 1887. They were obtained by Mr. James H. Innes, then Superintendent of the Government Dock-Yard, Esquimalt Harbour, from Mr. Hall, Factor of the Hudson's Bay Company at Port Simpson and now stand in the Pitt-Rivers Collection in the University Museum, Oxford. They display two totems, the Bear and the Killer-Whale (*Orca ater*) belonging to the Haida-Tsimshian group of tribes, whether Haidas of Queen Charlotte Islands or Tsimshians of the Mainland. In both cases the figures go beyond mere representations of the totem animals, and depict a mythic incident in which the human ancestor is believed to have come into relation with the animal which was thence adopted as the totem of the clan. The myth of Hoorts the Bear and Toivats the Hunter (Fig. *a*) being also represented on the Fox Warren totem-post described in the previous paper, the story there told need not be repeated here. The story of the Killer-Whale, to which the carving (*b*) undoubtedly refers, is substantially as follows: Ages ago the Indians were out seal-hunting. A killer kept alongside of a canoe, and the Indians amused themselves by throwing stones from the canoe ballast and hitting the back fin of the killer, which made for the shore and grounded on the beach. Soon a smoke was seen, and they found it was a large canoe and not the Killer-Whale (Skana) on the beach, and that a man was on shore cooking food, who asked them why they threw stones at his canoe. "You have broken it," he said, "now go into the woods and get some cedar withes and mend it." When they had done so he told them to turn their backs to the water and cover their heads with their skin blankets and not look till he called them. They heard it grate on the beach as it was hauled down into the surf, and the man said, "Look now." Then they saw the canoe going over the first breaker and the man sitting in the stern, but when it came to the second breaker it went under and came up outside a killer and not a canoe, and the man or demon was in its belly.

The Killer-Whale or Skana is a great spiritual being to the Haida-Tsimshian tribes, who worship and pray to it, blending in their ideas the actual animal and the demon Skana embodied in it. The present sculpture, which represents the myth just related, is unlike the preceding group in being less naturalistic in treatment,



a. *b.*

TOTEM HOUSE-POSTS IN PITT-RIVERS MUSEUM, OXFORD.

indeed it displays well the conventionalism of local art. Both sides of the killer's head are shown in a manner which illustrates the meaning of the duplicated figures of ancient and even modern art, while the distribution of fins, eyes, and teeth shows the tendency of the native artist to put in parts of the object he is representing according to available space, regardless of their actual position. The squatting figure is often thought by white men to be Jonah in the fish's belly, but in fact the story it belongs to is earlier than missionary teaching, and illustrates a most important point in religious art. Representations of souls and good or evil demons in the act of entering or quitting a material body are familiar to the anthropologist, but such a portrait as the present, of a spirit in its actual embodiment, is rare if not unique.

From another point of view, the theological development of the fierce Killer-Whale offers instructive evidence. Dr. Dawson records the native belief that he breaks the canoes, drowning the Indians, who themselves become whales. Two Indians once went out and the whales attacked the canoe. One of the men, grasping his knife, said if he were drowned and became a whale, he would hold his knife and kill the others. Accordingly he killed the chief and reigns in his stead. This seems a plain enough myth of transformation, but it bears on the origin of the modern Indian belief in a Good and Evil Deity. While, it is recorded, their chief deity was a good being, *Suniatlaidus*, to whose happy region went warriors slain in battle, their principle of evil was *Haidelāna*, chief of the lower regions, typified by or assuming the form of the dreaded Killer-Whale, the *Orca ater*, by whom the drowned are taken and become his subjects. Where in this account of a Good and Evil Deity the native belief ends and the missionary teaching begins is not easy to determine, so perfect is the junction.[1]

Explanation of Plate XIII.

Two Totem House-posts, in the Pitt-Rivers Museum, at Oxford.

[1] The principal literary authorities for Haida and Tsimshian Totemism used in the previous paper and this are :—J. G. Swan, "Haidah Indians," *Smithsonian Contributions to Knowledge*, vol. xxi, 1876. George M. Dawson, "Haida Indians," *Report of Geological Survey of Canada for* 1878–9, App. A. Albert P. Niblack, "Coast Indians of Southern Alaska and Northern British Columbia," *Smithsonian Reports, U.S. National Museum*, 1888. Franz Boas, "Reports of Committee on North-Western Tribes of Canada," *British Association, Section of Anthropology*, 1885–1898 ; *Bulletin American Museum of Natural History*, vol. ix, 1897.

REMARKS ON TOTEMISM, WITH ESPECIAL REFERENCE TO SOME MODERN THEORIES RESPECTING IT.

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It is desirable that I should state the purpose of my offering these remarks on Totemism. Though I have written very little about it, my first lines date as far back as 1867, and a little later I came to be well acquainted with J. F. McLennan, the beginner of the systematic study of this and kindred branches of anthropology. At that time he was engaged on his papers on *Worship of Animals and Plants*, and we had much conversation on the philosophy of totems. The cause of my holding aloof from published discussions of the subject since has been a sense of its really bewildering complexity, coupled with the expectation that further research among the races of the lower culture would clear its outlines, as indeed has been to some extent the case, especially in North America and Australia, the regions where totemism proper is most at home. The particular cause of my drawing up the present paper was my being invited to address a philosophical society meeting in Oxford under the presidency of Professor Sanday, the subject assigned to me being certain views on the anthropology of religion contained in the works of Mr. J. G. Frazer and Dr. F. B. Jevons. Whatever my hearers may have learnt from my remarks, at any rate I became aware that the time had come for a closer examination than seems to have been hitherto made as to the somewhat various and vague ideas which have become associated with the term totemism. It was evident that till this was done, it would not even be possible to ascertain what place the totem may properly claim to occupy in the theory of religion. My having undertaken to describe the great Totem-Post at Fox Warren, made the present a suitable occasion for bringing the general principles which this monument illustrates under the consideration of the Anthropological Institute. It will be needful for me to dissent from some current views and, what is of more consequence than such critical objections, to draw attention to the confusion in terms and definitions in use, which interferes with distinct reasoning. May I say that as time prevents any attempt at fully arguing out the problems raised, all I positively undertake at present is to bring forward evidence showing that particular conclusions are not really settled, and cannot be without further discussion.

When McLennan in 1865 published his *Primitive Marriage*, his interest in totems was merely incidental to his study of exogamy. The North American

totem animal only comes in as furnishing the family name which classified clanship within whose limits marriage is forbidden, and though Sir George Grey had previously called attention to the close similarity between the kobong-clans of West Australia and the totem-clans of North America, McLennan in referring to him only attends to the question of intermarriage. It was in 1869 that the conception of totemism took shape in McLennan's mind as a great principle, one may even say the great principle of early religion, as well as early society. As his articles on the "Worship of Animals and Plants" in the *Fortnightly Review* in 1869–70 furnish the outsets of most of the lines along which the theory of totemism has been carried on to this day, as well as of some of its turns which have obstructed progress, a brief indication must be given of the tenour of these remarkable papers.

McLennan begins: "The subjects of the inquiry are totems and totem-gods, or, speaking generally, animal and vegetable gods." The order of the exposition, he continues, is to explain what totems are, and what are their usual concomitants; to throw light on the intellectual condition of men in the totem stage of development: to examine the evidence that mankind in prehistoric times came through the totem stage, having animals and plants, and the heavenly bodies conceived as animals for gods before the anthropomorphic gods appeared; and to reach the conclusion that the hypothesis of the ancient nations having come through the totem stage is sound. Now McLennan was quite aware of what goes to make a totem in North America, that it involves the division of tribes into totem-clans each with its proper totem-animal, and the rule of exogamy forbidding marriage within the clan so as to necessitate intermarriage between clans; the totem-animals being also regarded as kinsfolk and protectors of the clansmen, who respect them and abstain from killing or eating them. Such totems, he remarks, prevail among two distinct groups of tribes, the American Indians and the aborigines of Australia, and it may be believed that many more instances of their prevalence will be brought to light. I mention this to show that he started with a distinct idea of what may be called totemism proper, with its division of tribes into clans allied to species of animals, etc., between whom and the men there were rules of marriage, protection, and respect. It will now be seen how, starting from this totemism proper, McLennan proceeded to take in with it other kinds of animal and plant worship, and to form the result into an expanded doctrine which he continued to call totemism.

In order to understand McLennan's argument, its starting point has to be found in a narrative by J. Long, a trader and interpreter among the North American Indians in the last century. Of the Chippeways (Ojibwas), Long writes, that one part of the religious superstition of the savages consists in each of them having his *totam*, or favourite spirit, which he believes watches over him. This totam they conceive assumes the shape of some beast or other, and therefore they never kill, hunt, or eat the animal whose form they think this totam bears.

One of the Indians, whose totam was a bear, dreamt (it seems) that he went to a piece of swampy ground about five days' march from Long's wigwam, and saw a large herd of elks, moose and other animals. He went accordingly, and seeing the animals he had dreamed of, fired and killed a bear. Shocked at the transaction, and dreading the displeasure of the Master of Life, whom he conceived he had highly offended, he fell down and lay senseless for some time; recovering from his state of insensibility he got up and was making the best of his way to Long's house when he was met in the road by another large bear, who pulled him down and scratched his face. The Indian relating this event, at his return, added in the simplicity of his nature that the bear asked him what could induce him to kill his totam, to which he replied that he did not know he was among the animals when he fired at the herd, that he was very sorry for the misfortune and hoped he would have pity on him; and that the bear then suffered him to depart, telling him to be more cautious in future, and to acquaint all the Indians with the circumstance, that their totams might be safe and the Master of Life not angry with them. As he entered my house, Long continues, he looked at me very earnestly and pronounced these words: "*Amik hunjey ta Kitchee Annascartiosey nind O Totam cawwicka nee wee geossay sannegat debwoye,* or "Beaver! (Long's Indian name) my faith is lost, my totam is angry, I shall never be able to hunt any more."[1]

McLennan's comment on this story is as follows: "Should one be surprised to find that admonitory bear of the man's imagination worshipped as a god further on in the history of Bear tribes advancing undisturbed by external influences, correlated with the Master of Life in the Olympus, or even preferred to, or identified with him?" On examination, however, I venture to think that neither can the trader-interpreter's account be accepted as correct, nor taken as a foundation for the hypothesis of the development of totem-animals into great deities which the anthropologist builds upon it. Long evidently mixed up two articles of Ojibwa belief which are quite distinct. He knew the word *totem* (*ot-ote-m* = his *ote*, clan-name or clan-animal) and indeed his book very likely introduced the word into European language: also he knew of the rule against killing or eating the totem-animal. But his book shows no sign of his having learnt the system of the Ojibwa clan, without which knowledge he would not understand how the totem-species of animal was common to the clan as a whole. When he describes it as a favourite spirit which watches over each Indian, he evidently confuses it with the guardian spirit in animal form, which the individual Ojibwa also had, and called not his *totem* but his *manitu* or spirit, in trapper's jargon his *medicine*. Then, as to the particular story in question, how does it prove that the imaginary bear, who, as the Indian declared, scratched his face and gave him a warning from the Master of Life, was a being in course of development into a god to rival or become the Master of Life himself? It has to be noted as to these Ojibwas, that far from

[1] J. Long, *Voyages and travels of an Indian Interpreter and Trader.* London, 1791.

their religion "advancing undisturbed by external influences," it had really superposed on the old native beliefs the Jesuit missionary teaching, especially as to this *Master of Life*, who was so distinctly the Christian Deity that, as Long more than once mentions, the Indian name for a Roman Catholic priest was *Master of Life's man*. Not only do we find a development hypothesis of deities read into a story which does not contain it, but the whole account is a warning of the risk of uncontrolled theory as to divine evolution. From an angry bear in the backwoods to a supreme deity of the world is too long a course to be mapped out in merely ideal stages.

In following out McLennan's original and suggestive if inconclusive attempt to interpret the great gods of the world as evolved from the humbler rank of totem-animals, it has to be noticed how other evidence of animal-worship had to be dealt with in order to people the Totem Olympus with totem-gods of superior tribes. In order to make a place for the Natchez Indians of Florida, who claimed to be descended from the sun, and were called suns accordingly, and took wives only from other clans, the fundamental idea of a totem-creature as one of a species is dropped without scruple, and these people are incorporated as totemists whose totem was the sun. Another great province of religion is annexed by a theory that gods who have their incarnations or embodiments in species of sacred animals may be considered as deities evolved from these animals as totems. For examples, the highest Fijian deity is Ndengei, whose shrine is the serpent, and second to him is Tui Lakemba, who claims the hawk as his shrine, this claim being indeed disputed by another god who claims the hawk for himself. One god is supposed to inhabit the eel, wherefore the worshipper of the eel-god must never eat eels. The sacred animal receives food and reverence in the name of his god; when a land-crab comes to the island of Tiliva, where he is sacred, but now seldom seen, presents are made to him lest his god should bring drought or death on the islanders. On these statements, derived from the *Fiji and the Fijians* of Thomas Williams, McLennan comments thus:—"These gods are tribal, and no one can doubt but they are totems who have made such progress as we above suggested the Bear might make, and are become the objects of a more or less regular worship—the Serpent tribe dominant, and the Hawk tribe in the second place." Yet considering that there is no evidence of totems or totem-clans proper in Fiji, this conjecture which "no one can doubt" is one which no one need believe. Indeed, if it is assumed that every sacred animal is a totem and every group of worshippers a totem-clan, this is to contradict McLennan himself, who in a passage close by defines totemism as fetishism plus exogamy and maternal descent, a definition which is in great measure throwing up his case. Such want of consistency shows that the whole *Fortnightly Review* essay is rather to be treated as an introductory speculation than as a system. It should be remembered that its author thought well to insert a note to the effect that he only submitted an hypothesis which even if it failed would be useful in dealing with the evidence. What is still more to the purpose is that he never reprinted these articles, though he spent

much time in his later years in gathering further materials bearing on the question. Necessary as they are to every student of the subject, it is satisfactory that they are now published in the supplementary volume of his works.[1] But it would not be needful to criticise their details so many years after date, were it not that McLennan's authority has had weight enough to induce modern writers to repeat even his conjectures as established principles.

Mr. J. G. Frazer's little manual of Totemism[2] is as a classified collection of evidence of permanent value to Anthropology. The writer treats totems under three heads, the *clan-totem*, common to a whole clan; the *sex-totem*, an Australian variety; and the *individual-totem*, belonging to a single person and not hereditary. But the clan-totem being the most important, he explains that when totems and totemism are mentioned without qualification, the clan-totem is always referred to. Now it has been just mentioned how McLennan, when writing on animals, etc., in which Fijian gods become incarnate, treats these as equivalent to totems, with which in fact they have but a partial and doubtful analogy. Mr. Frazer not only follows this line of reasoning, but carries it further. His chief authority is Dr. Turner's *Samoa*.[3] This book is familiar to me (in fact I wrote the preface to it), so that I was puzzled to read passages cited from it by Mr. Frazer, as to totems and clans connected with them, such being as foreign to Samoan as to Fijian institutions. Thus it is stated that the Samoans thought it death to injure or eat their totems, for the totem would take up his abode in the sinner's body till it caused his death; if a Turtle man ate of a turtle, he grew very ill and the voice of the turtle was heard in his inside, saying, "he ate me, I am killing him." It is related as from Dr. Turner, that when among the cuttle-fish clan an offence of this kind had been committed, the clan met and chose a person to go through the pretence of being baked as an expiation. But on reference to the original passages in Dr. Turner's book, it will be found that neither totems nor totem-clans are there, either by name or description. It was a family god who said from within the body of the offending turtle-eater, "I am killing this man, he ate my incarnation." As to the cuttle-fish, it was as a household god, that is, a god selected for one or more members of a family at their birth, that he was appeased by the ceremony of a human victim being baked in a cold oven. From these and other cases it appears that Mr. Frazer had so framed his mind on McLennan's theory, as to feel justified in altering the very terms of the account of Samoan religion, in order to make them fit with it. Yet Dr. Turner is an authority of the first class, and his understanding of the Samoan theology is confirmed by the *Samoan Texts* of Dr. Stübel.[4] The doctrine of totem-animals and the doctrine of incarnation-animals no doubt both belong to the general theory of animal worship, but it does not follow

[1] J. F. McLennan, *Studies in Ancient History*. Second Series, Appendix, 1896.

[2] J. G. Frazer, *Totemism*, 1887.

[3] G. Turner, *Samoa*, 1884.

[4] O. Stuebel, *Samoanische Texte*, Veröffentlichungen aus dem K. Museum für Völkerkunde, Berlin, 1895.

that a species of animals allied to a clan of men is to be regarded as the same as a species of animals inhabited by a god. Yet the theory of development of gods from totems has its chief support in the Fijian and Samoan gods, who, it is taken for granted, were thus invented out of their own sacred animals.

Let us test the value of such an assumption by the example of the great Malayo-Polynesian heaven-god Tangaloa, known from the Indian Archipelago down to New Zealand, and of whom the widespread myth is told of his creating the earth with the aid of his daughter, Turi the snipe. In Samoa he is called Tangaloa langi or Tangaloa of the Sky, and he becomes incarnate in the snipe as his sacred creature. Therefore, according to the totem-theory we are now discussing, this Polynesian Jupiter, as he has been called, may be set down as a highly developed snipe. Indeed, the theory has no limit in a religion in which any priest of authority need only give out that his god will appear in a rat or an eel, for rats or eels to be established as his incarnations, and claimed by European theorists as totems from which the god himself arose in days of old.

In arguing against premature conjectures as to the origin of deities, I am anxious that the investigation of causes tending in this direction should not be restricted. The development of ideas of deity in early religion is but imperfectly understood, and so far as known seems to have resulted from various and complex causes. Among such it is necessary to consider the tendency of mankind to classify out the universe, supposing each class of objects or actions to be under the headship of a mythical being of suitable rank, its ancestor, creator, maintainer, ruler. Far from being prejudiced against this process of formation of gods, I did my best many years ago to collect a set of examples of such generalisation.[1] Thus among the American Indians, each kind of animals was believed to have an Elder Brother, as it were the principle and origin of all the individuals, and so marvellously great and powerful, that as the missionary who mentions them declares, the elder brother of the beaver is as big as our cabin. Again, in Slavonic folklore, we hear of the snake older than all snakes, and the raven elder brother of all ravens, etc. These with others, such as the Peruvian star-archetypes of tigers, sheep, etc., I classed under the heading of "species-deities." Mr. Frazer naturally seeks support for the theory of totem-gods in these cases, and to the two which appear in his manual he adds a statement from Falkner's *Description of Patagonia*, written in the last century, which it is best to set down here more fully. The Jesuit missionary mentions the deities living in subterranean caverns, each of whom presides over one particular cast or family of which he is supposed to have been the creator. Some make themselves of the cast of the tiger, some of the lion, some of the guanaco, and others of the ostrich, etc. When an Indian dies, his soul goes to live with the deity who presides over his particular family. They believe that their good deities made

[1] Tylor, *Primitive Culture*, 1871, vol ii, p. 242.

the world, that they first created the Indians in their caves, and when the beasts, birds, and lesser animals were created, those of the more nimble kind came immediately out, etc., etc. But taking Father Falkner's account as it stands (and indeed according to Captain Musters, the gods are still there in the caves), it seems in no way to imply that the divine creators of the world, the men, and the animals, were themselves animal-gods. As, however, a species of totem-animals is a class, it is always open to possibility that it may be thought to have a class-deity over it. If such a totem-deity can satisfactorily be traced, let him by all means be acknowledged and receive such spiritual rank as he is entitled to. As yet I have met with no valid instance of such divine development taking place. The nearest approach to such I can offer is among the Haidas of North-West America, who have two phratries or groups of totem-clans, called, from their principal totems, the Raven and the Wolf or Eagle. Also the Haidas tell stories of two great personages, Yētl and his rival Kanuk, who figure in legends of creation of the earth, the getting of fire, and the like. Now Yētl commonly appeared in the form of a raven, so that the word *yētl* is used for any raven. So far there seems an arguable case for the mythic raven-deity, on the supposition of Yētl being an expansion of the raven totem. But Professor Boas, after careful examination, does not identify the raven of the legends with the raven of the totem.[1] It is to be added that the other legendary god Kanuk does not appear as a wolf, nor is a wolf called by his name.

What I venture to protest against is the manner in which totems have been placed almost at the foundation of religion. Totemism, taken up as it was as a side-issue out of the history of law, and considered with insufficient reference to the immense framework of early religion, has been exaggerated out of proportion to its real theological magnitude. The importance belonging to totem-animals as friends or enemies of man is insignificant in comparison with that of ghosts or demons, to say nothing of higher deities. The rise and growth of ideas of deity, a branch of knowledge requiring the largest range of information and the greatest care in inference, cannot, I hold, be judged on the basis of a section of theology of secondary importance, namely, animal-worship, much less of a special section of that, namely, the association of a species of animals with a clan of men which results in totemism. A theoretical structure has been raised quite too wide and high for such a foundation.

Some passages may be cited from a recent work of much argumentative ability, the *Introduction to the History of Religion*, by Dr. F. B. Jevons, in order to show the theological results which may be drawn from the totemistic theories here discussed, when accepted as established principles and pressed by too confident logic to further consequences "The sacrifices offered to Jehovah point back, then, not to polytheism, but to a low form of monotheism, in which each clan that offered sacrifice worshipped but one god, though that god was

[1] F. Boas in *Report of British Association*, 1888–9, *Committee on N. W. Tribes of Canada*; for further details see the previous paper on the "Totem-Post at Fox Warren," p. 133.

conceived in the form of the animal or plant which was sacrificed" (p. 392). "The earliest form of society, the clan, is not only a social community, it is also a religious society; fellow-tribesman and fellow-worshipper are convertible terms, because the members of the clan are united to one another, not only by the bond of kinship, but also by joint communion in the sacramental sacrifice of the totem-god" (p. 391). Dr. Jevons places himself at a disadvantage by basing his argument on particular views which he describes as "the most recent results of anthropology," instead of taking the safer course of working out the evidence for himself. The totem-god whom he sets over "the lowest form of monotheism" is, I have tried to show, a merely hypothetical being. Nor does the evidence offered to trace his sacramental position as at once god and victim find any conclusive proof in the totem-worship of the low-cultured world. The immense influence of sacrificial feasts as means of binding societies of worshippers together, and to their common divinity, is indeed undeniable, and to have pressed it on the public mind is one of the great merits of the late Professor W. R. Smith's teaching.[1] But when it came to his introducing the totem into the doctrine of the slain god, and suggesting with reference to passages in Mr. Frazer's manual, that totem-sacraments are found among rude hunting tribes, he was, I venture to think, no longer on solid ground. That a Californian tribe should for their annual festival have killed in each village one of the sacred turkey-buzzards, taking its feathers for the priest to dress in the character of their god who had appeared to the people in such guise, is a rite which explains itself without supposing that the bird was a totem, or its death an expiatory sacrifice. Nor does there seem a piacular motive in the annual rite among the Zuñi Indians of killing the turtles, their kinsfolk, to go to "our lost others" in the lake of the dead. Indeed Mr. Frazer has since changed his opinion of this ceremonial rite, taking it as a case of transmigration of souls. I need not go into further details, preferring to quote a later remark by Mr. Lang, "But Mr. Frazer and I both admit, and indeed are eager to state publicly, that the evidence for sacrifice of the totem and communion in eating him is very scanty." It may be reasonable to go a step further and suggest that till the totem-sacrament is vouched for by some more real proof, it had better fall out of speculative theology.

While as yet the time has not come to offer so conclusive an explanation of the origin and development of totemism as would clear the whole subject, it will be well to draw attention to its history of late years. McLennan did not commit himself to a definite theory, which was wise considering the scantiness of the evidence. Mr. Herbert Spencer's conjecture as to ancestors named Wolf, Bear, etc., giving descent to clans so called, is merely artificial. Mr. Frazer in his *Totemism* leaves the question open, but in his *Golden Bough* he proposes a theory

[1] W. R. Smith in *Encyc. Brit.*, 1886, art. "Sacrifice"; *Religion of the Semites*, p. 386; J. G. Frazer, *Totemism*, p. 48; *Golden Bough*, vol. ii, p. 94; A. Lang, *Modern Mythology*, 1897.

which is to be found in the writings of Professor G. A. Wilken, as to the notion of the human soul passing into an animal, plant, or other object, and thus causing a sympathetic connexion between the person and the receptacle of his soul. This Wilken[1] exemplifies from folklore by the Hindu tale of Punchkin, whose life was bound up with the life of the little green parrot, which was in the little cage, which was under the six water-jars, and so forth; the Russian tale of Koshchi the deathless, whose death was in an egg, and the egg in a duck; the Malay tale of Bidasari, whose soul was in a fish, etc. Thence we pass to the practice of sorcerers in the Malay archipelago of depositing the souls of people for security outside them at dangerous times, as when the soul of a woman in childbirth is transferred to an iron cleaver in charge of the sorcerer. In this way Wilken accounts for the Mexican idea of the animal assigned to a child as its *nagual* or tutelary genius, there being henceforth sympathy between the two, so that the death of the one involves the death of the other. So he explains the sympathetic tree on which the life of a person or family depends, as so often is related in European folklore. This evidence and argument provide Mr. Frazer with a theory of the origin of totems. He argues that the man's relation to the totem is derived from his soul (or one of his souls) residing for security in one of the totem-creatures, whence his worship of them and his objection to killing and eating them, and their reciprocal kindness to and protection of him, and the general conception that the man and his totem guardian are kinsfolk by descent. It will be seen that this theory goes part of the way toward accounting for the peculiar qualities of totems. But there are also objections to it which seem, to me at least, insuperable. One is that if tribes living under the totem-system really thought their souls were in the totem-animals, we should have heard of it long before this, whereas there does not appear to be a single mention of such an idea. Also the rule that an exogamous savage under the maternal system abstains from killing or eating his totem-animal for fear of losing his life, while his wife and children, being of a different totem, put him daily in such danger by devouring it, seems a hopeless inconsistency. I will not, however, pursue this line of criticism, being more anxious to call attention to Wilken's own view of the origin of totems, which, if it does not completely solve the totem-problem, at any rate seems to mark out its main lines.

This eminent anthropologist has collected in his *Animism among the Peoples of the Malay Archipelago*,[2] accounts of the native animal-worship prevailing in that region, one of those where it is still possible to study the state of mind of peoples who frankly recognise in certain animals their spiritual equals and indeed, superiors; beings whose bodies not only have limbs and organs corresponding to their own, but who have, as it were, human thought and speech, and may excel man not merely in strength but in wisdom. The crocodile is especially venerated; he is Tuwan-besar,

[1] G. A. Wilken, *De Simsonsage; De Betrekking tusschen Menschen-Dieren-en Plantenleren;* in *Indische Gids*, 1884, 1888: *Ueber das Haaropfer*, etc., in Revue Coloniale Internationale, 1886–7.

[2] G. A. Wilken, *Het Animisme bij de Volken van den Indischen Archipel.*, 1884–5, part I., pp. 74–5.

Great Lord, and regarded as equal in rank to the Dutch Resident. Crocodiles are kindly and protective beings, to kill whom is murder, indeed they may be man's near relatives; offerings are made to them, and people look forward to the great blessedness of becoming crocodiles when they die. So it is with tigers, whom the Sumatrans worship and call ancestors (*nenek*), whom their countrymen will not catch or wound but in self-defence, so that when one has been trapped they try to persuade him that it was not their doing. Wilken sees in this transmigration of souls the link which connects totemism with ancestor-worship, and on considering his suggestion, we may see how much weight is to be given to the remarks made independently by Dr. Codrington[1] as to Melanesia. He found that the people in Ulawa would not eat or plant bananas, because an influential man had prohibited the eating of the banana after his death because he would be in it: the elder natives would say, we cannot eat so-and-so, and after a few years they would have said, we cannot eat our ancestor. In Malanta, a man will often say he will be in a shark. Dr. Codrington has lately sent me a note from Mr. Sleigh, of Lifu, who writes: "When a father was about to die, surrounded by members of his family, he might say what animal he will be, say a butterfly or some kind of bird. That creature would be sacred to his family, who would not injure or kill it: on seeing or falling in with such an object the person would say, 'That is *kaka* (papa),' and would, if possible, offer him a young cocoa-nut. But they did not adopt thus the name of a tribe." As to such details, we may, I think, accept the cautious remark of Dr. Codrington, that in the Solomon Islands there are indeed no totems, but what throws light on them elsewhere. The difficulty in understanding the relation of a clan of men to a species of animals or plants is met by the transmigration of souls, which bridges over the gap between the two, so that the men and the animals become united by kinship and mutual alliance; an ancestor having lineal descendants among men and sharks, or men and owls, is thus the founder of a totem-family, which mere increase may convert into a totem-clan, already provided with its animal name. By thus finding in the world-wide doctrine of soul-transference an actual cause producing the two collateral lines of man and beast which constitute the necessary framework of totemism, we seem to reach at least something analogous to its real cause. But considering the variations found even between neighbouring tribes in the working of their ideas, it would be incautious to lay down as yet a hard and fast scheme of their origin and development. As an example of this may be taken the remarkable new information by Professor Baldwin Spencer,[2] of Melbourne, as to the totem-system of the Arunta tribe, contained in papers communicated to the Royal Society of Victoria in anticipation of his forthcoming work on the *Tribes of Central Australia*. The exogamous arrangements of the Aruntas, as is common in the country, depend on classes or phratries, descent being on the father's side. Individuals are classed by totem-names, Hawk, Witchetty Grub, Emu, Kanguru, Grass Seed, etc., though these do not

[1] R. H. Codrington, *The Melanesians*, pp. 32–3.

[2] W. B. Spencer in *Proc. Roy. Soc. Victoria*, vol. x, N.S., 1897–8.

regulate the marriages. The explorers were much perplexed to find that such totem-names of the children did not necessarily follow those of either parent; thus of two parents, both Witchetty Grubs, one child might have the same totem and another be a Wild Cat. On inquiry into this apparent confusion, a mythical meaning was disclosed by the natives somewhat as follows: In the old alcheringa or dream times, it was explained there were ancestors who lived and wandered about the land in groups of kangaroo-men and emu-men and the like, of whom one could not say whether they were men, or kangaroos and emus. That these names represented totems seems clear from the belief that at first each group belonged to its proper half of the tribe. As these ancestors wandered over the land, some of them went into the ground at certain spots and turned into the sacred churingas or bull-rearers so important in native Australian rites, and thus in the Arunta country there are numerous spots where these wooden humming instruments are buried, each associated with a spirit-ancestor, and carrying his or her totem-name. As the natives now wander about the country, wherever a child is conceived, one of the ancestor-spirits deposited in that place enters into that child, who takes the local totem accordingly, becoming a Bandicoot or a Witchetty Grub, or what not. A more extraordinary animistic scheme was perhaps never known, yet even here the transference of souls between the man-line and the beast-line is evident.

In these remarks it has seemed safest not to pursue analogies, developments, or survivals of totemism into the religions of the old civilised world, Egypt, Babylonia, India. It may be best to postpone such inquiries until savage and barbaric animal-worship has been more strictly classified, and the totem has shrunk to the dimensions it is justly entitled to in the theological schemes of the world. Nor do I propose to enter into detailed discussion of the social results on the strength of which totemism claims a far greater importance in sociology than in religion, connected as it is with the alliance between clans which ensues from the law of exogamy only allowing marriage between different clans, as determined by the clan totems. Exogamy can and does exist without totemism, and for all we know was originally independent of it, but the frequency of their close combination over three-quarters of the earth points to the ancient and powerful action of the totems at once in consolidating clans and allying them together within the larger circle of the tribe. This may well have been among the most effective processes in the early social growth of the human race.

JUNE 14TH, 1898.

F. W. RUDLER, Esq., F.G.S., *President*, in the Chair.

The Minutes of the last Meeting were read and signed.

The election of JOHN JENNINGS, Esq., Dr. F. B. JEVONS, and Miss MARY KINGSLEY, as Fellows of the Institute, was announced.

The PRESIDENT introduced Capt. the Hon. CECIL DUNCOMBE, who proceeded to read his paper on "The evidence of Lake Dwellings on the banks of the Costa, near Pickering, Yorkshire," and exhibited a collection of objects found there. Mr. MITCHELSON (the discoverer of the remains) added some interesting particulars, and the paper was discussed by Mr. C. H. READ, Rev. H. N. HUTCHINSON, Dr. GARSON, and others. Capt. DUNCOMBE having made a few additional remarks, the PRESIDENT proposed a vote of thanks to him and to Mr. Mitchelson, which was cordially carried.

The Rev. JAMES OLIVER BEVAN then exhibited and described a large collection of Stone Implements from North America. Discussion on this subject was carried on by Mr. O. H. HOWARTH and Dr. GARSON, and a vote of thanks to Mr. Bevan was passed.

Mr. JOHN JENNINGS exhibited a large and curious collection of objects, both ancient and modern, which he had just brought home from the New Hebrides; and he also described some of the native ceremonies. A hearty vote of thanks was accorded to Mr. Jennings.

Mr. R. B. HOLT then read his paper on "The Marriage Laws and Customs of the Cymri," and a vote of thanks was passed to the author.

EVIDENCE OF LAKE DWELLINGS ON THE BANKS OF THE COSTA, NEAR PICKERING, NORTH RIDING OF YORKSHIRE.

By Captain the Hon. Cecil Duncombe, F.G.S.

[with plate xiv.]

Rich as is the great County of York in prehistoric remains there is one discovery of the kind which seemed to me to be less known than its interest, importance, and uncommon occurrence demanded. I trust, therefore, that no apology is needed for bringing that discovery before you this evening by means of a brief description, which I have prepared with the assistance and the valuable information of my friend Mr. James Mitchelson, the discoverer, who resides at the Hall, Pickering; and who, I am pleased to say, is here this evening. I had the advantage of visiting the site of the discovery in his company more than once while excavations were in progress, and I have since had several opportunities of inspecting the large collection of relics he had accumulated, specimens of which are before you this evening.

I have headed this paper *Evidence of Lake Dwellings*, because the dwellings themselves have not as yet been unearthed, though I think there can be no doubt they once existed in the immediate neighbourhood of the locality to be described, where their remains are in all probability to be found.

The interesting discovery in question was made by Mr. Mitchelson in the spring of the year 1893.

The Costa is a small stream or beck, to give it its local appellation, which, springing from the limestone rock near Pickering, flows in a south-westerly direction through the low-lying peaty lands which cover that part of the vale to which the town gives its name.

Mr. Mitchelson first observed that during the usual operation of cleaning out the beck for drainage purposes in the above-named year some pieces of rude pottery had been thrown out on the bank. His curiosity being thus excited, on a subsequent occasion he waded into the water, and soon found much more of the same kind of pottery, mingled with bones of animals: he also saw some piles above the water which had become uncovered during the cleaning process. The piles formed two parallel rows, crossing the stream at right angles to its course, and appeared to continue under the bank. Subsequent excavation proved that this was so, and that they were arranged in groups, three or four together. The rows of piles were inclined to each other, and were separated by about 4 feet 2 inches at the top, and by 5 feet 4 inches at the bottom, where they rested on the

Kimmeridge Clay, which underlies the superficial strata of the Vale of Pickering. They were made of oak, birch, and alder, and measured from 6 to 10 inches in diameter.

Three other rows of piles cross the Costa in the same neighbourhood, separated by a few hundred yards, and as they lie at right angles to the stream, which here forms a concave bend, they appear to converge upon one point. This point, roughly speaking, forms the centre of a *quasi* island, between the Costa on the one hand and a large drain on the other, called the 12 feet Cut, where, no doubt, water always rested or flowed in ancient times. So far as has been ascertained the double rows of piles seem to have supported causeways leading to the island, and as there are several rows it would appear not unlikely that they afforded means of access to separate lake dwellings, as frequent bridges to one island or group of buildings would be unnecessary, and a source of danger. Probably a thorough exploration of the whole site would disclose the remains of lake dwellings similar to some of those of Switzerland.

A section of the ground shows the strata in the following order. Below the superficial cultivated soil, 8 or 10 inches deep, there is about 2 feet 6 inches of a stiff, blue clay; next comes about 6 feet of peat, resting on the Kimmeridge Clay. Mr. Mitchelson caused a large hole to be dug round the piles within the bank—a work of difficulty, owing to the continual flow of water into the hole from the adjoining land above. It was not until the Kimmeridge Clay was nearly reached that the great bulk of the relics appeared, and many of them rested upon the clay itself. These relics, consisting chiefly of animals' bones, were found in such quantities that the place seems to have been a kind of kitchen rubbish-pit, or receptacle for the house refuse of a large community for a long period of time. From the hole, excavated, which measured about 12 feet by 9, and 6 or 7 feet deep, enough bones were taken out to have filled an ordinary farm cart, but, as before stated, they were not found until the bottom was nearly reached. A large quantity of broken pottery of a very rude kind was also found, made of coarse clay mixed with spar and small stones; all of it was hand-made. Some of the vessels must have been of large size, and had walls an inch thick.

The bones included the following:—

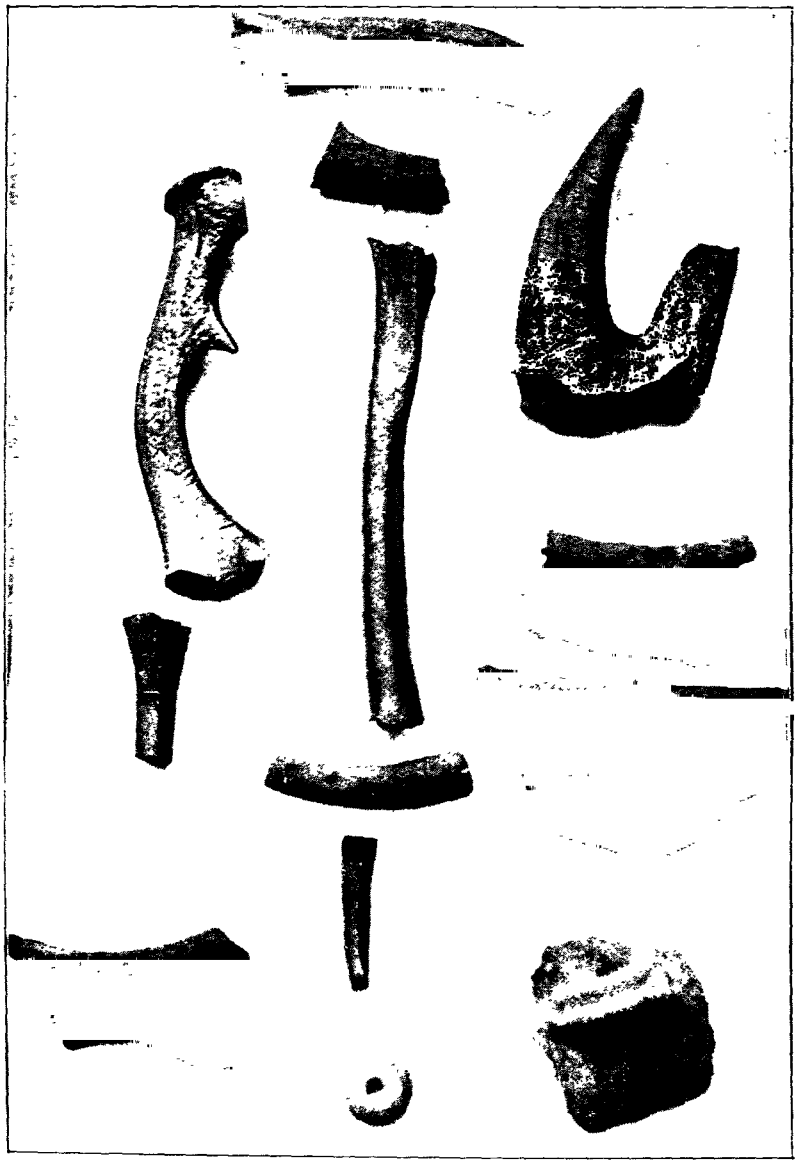
Human (of at least four individuals).
Deer (of three species).
Horse (a small variety), numerous.
Ox (*Bos longifrons*), numerous.
Sheep (straight-horned), numerous.
Goat (one skull).
Pig (both wild and domesticated).
Wolf.
Fox
Otter.
Beaver (one skull).

Voles (of different kinds).
Birds.

One species of deer must have been as large as the American wapiti. The third kind was a very large palmated deer.

The human bones were apparently those of a very small race. The complete skeleton of a young woman was found, with the exception of the skull. Though an adult she could not, judging from the thigh bones, have exceeded 4 feet 6 inches in height, and the owner of the longest thigh bone would not have exceeded 5 feet. Though the bones are those of a people of short stature they are remarkable for their very prominent ridges for the attachment of the muscles, such as are quite unknown at the present day in England. They denote a race inured to hard toil, or one leading a life of constant activity. Such was Prof. Boyd Dawkins' opinion, who examined the remains in 1896. About the breast-bone of the young woman was found a piece of the split tine of a red deer's horn, with five holes bored through it, and below this was the point of another tine, as though it had been a pendant to the former, the whole forming a rude kind of necklace. Many of the deer's horns had been cut through, but apparently not with metal tools. There are failure nicks on the horns where the tool has slipped before the final cut was commenced, and which was probably made with sand, water, and a thin piece of wood, or a rib bone used as a saw. No iron, bronze or flint tools have so far been found on the site, but eight or ten splint bones of deer and horses were found lying together, as though they had been originally laid aside to be formed into pins or needles, and had all been thrown away together.

The question naturally arises: What relation do these remains bear to others in Britain of a similar kind? And the answer seems to be that there were lake dwellings in Yorkshire at a period long anterior to those of the Iron Age of Scotland and Ireland. In the instance under review the 3 feet or so of blue clay above the peat, and covering the relics, seems to prove that the whole district was submerged for a long period after the settlement was abandoned. In being deeply buried they bear resemblance to the Holderness remains described by Dr. Munro in his well-known work. There are other considerations very significant. There is an entire absence of iron both in the Costa and in Holderness, where only one bronze spear-head was found, though there were many flint tools and flakes. Then again in Holderness there were deer-horn hand picks, similar to those of Grimes Graves in Norfolk and of some East Riding Wold barrows, undoubtedly of the Stone Age. It seems highly improbable that such primitive tools would have been used if iron had been available. Then in the case of the Costa, there is the diminutive size of the human remains, paralleled by those of the long barrow period, and the huge *linea aspera* of the thigh bones. It seems then that the pile dwellings of Northumbria may have been contemporary with the earliest Swiss *Pfahlbauten* of the Stone Age.



RELICS FROM THE COSTA NEAR PICKERING YORKSHIRE.

The Costa find was not known when Dr. Munro wrote his book on the *Lake Dwellings of Europe*,[1] but he recognizes in the Holderness remains unusual antiquity[2] which appears still more conspicuous in the former case. He remarks that the habit of living in lake dwellings is alluded to by classical writers as practised by the great Celtic race, and he adds that it lasted the longest in such countries as Scotland and Ireland, which were the refuge of these people when overwhelmed by successive tides of invasion, and where the language still lingers.[3] He believes the earlier remains of the eastern counties and of Holderness to belong to the time when the Celts migrated into Britain, bringing with them the customs so long obtaining in Central Europe. But the Costa remains seem to belong to a different race, to a ruder people, to a remoter antiquity. This, however, is a question that can only be set at rest by a complete exploration of the site. It will be a work of some magnitude, but it is to be hoped it will one day be accomplished.

Explanation of Plate XIV.

Fragments of coarse Pottery, and of Antlers and limb-bones of Deer (*Cervus*): also perforated tines of Antlers of Red Deer; all from the excavation in the Costa, near Pickering, Yorkshire.

Discussion.

Mr. C. H. Read, after expressing the interest he had felt in Captain Duncombe's paper and exhibition, ventured to demur somewhat at some points in the paper. It could scarcely be maintained, in his opinion, that the round barrows of the East Riding were of the Neolithic period. The evidence rather showed that they should be assigned to the earlier stage of the Bronze period, as when bronze implements were found they were invariably of what had been classed as the early types. To judge, however, from the part of the exhibition which came within his range, viz., the pottery—Mr. Read felt that neither the Bronze nor the Stone period had much to do with the objects on the table. Apart from other reasons, the resemblance between the types of vases now in question and those found by General Pitt-Rivers in his excavations in the Romano-British sites at Rushmore was so strong that in Mr. Read's opinion it would be safer to assign a date to Mr. Mitchelson's discoveries a good deal nearer to the Roman occupation than to even the end of the Bronze period.

The Author said in reply :—I quite agree that most of the Wold barrows of the East Riding of Yorkshire are of the Bronze Age, but I think it would be going too far to say that none of them are neolithic. I would particularly refer to one of the many explored by Canon Greenwell, and described by him in his *British Barrows*, p. 231. It is in the parish of Rudstone, not far from Bridlington, and in it were found many flint tools and flakes, but not a trace of bronze or iron. In this barrow there was one of the red-deer's horn pickaxes to which I referred similar to those found in the ancient flint mines called Grimes Graves in Norfolk where also was a profusion of flint tools, but no metal. In the East Riding, Holderness, lake dwellings, discovered by Mr. Boynton of Bridlington, similar

[1] *Lake Dwellings of Europe*, p. 473. [2] *Ibid.*, p. 490. [3] *Ibid.*, p. 491.

deer's horn hand-picks were found, and many flint and bone implements, but only one bronze spear-head, and not a trace of iron. It seems, as I have said, highly improbable that these primitive tools would have been used in the Romano-British period, when iron had already been introduced into Britain. Amongst the Holderness relics there was pottery similar to that now exhibited. Its antiquity has been called in question. It may be of Romano-British type, but that type may have come down from a remote antiquity, and coarse pottery has been found in the lake dwellings of the Stone Age in Switzerland. Then there lies on the table part of a horn of an extinct species of deer, which seems also to point in the same direction. As to the human remains indicating a race of small stature which has been called in question by Dr. Garson, that was the opinion of Prof. Boyd Dawkins, to whom they were shown in 1896. We have then, the deer's horn and flint tools of Grimes Graves in Norfolk, the similar ones of the Holderness lake dwellings, and of the Rudstone barrow in East Yorkshire. Dr. Munro sees evidence of the earliest Celtic immigration into Britain in these relics, and with these this North Riding find should be more likely to be contemporaneous, rather than with the late Celtic Crannogs of Scotland and of Ireland. But, as I have stated, this question can only be settled by further exploration, and in these remarks I had no intention to dogmatize, but rather to invite a discussion which might throw some light on this interesting point: and it is quite possible that further discoveries may disprove a degree of antiquity of which at present there appears to be some indication.

Exhibition of Stone Implements, etc., from North America.

By the Rev. James Oliver Bevan, M.A., F.G.S.

The exhibition comprised about 500 objects, principally from Illinois and Ontario, including spades, hammers, celts, rubbing-stones, banner-stones, axe-heads, spear-heads, clubs, pipes, etc. Mr. Bevan briefly described the collection, and referred to the mode of working some of the objects. He also exhibited some charms, amulets and medicine-bags: and described the choice on the part of an Indian youth of his particular medicine, and referred generally to the superstitions which enslaved him. The exhibition also included mocassins and other articles manufactured by Indian women at the present day. Two skulls were exhibited, and Mr. Bevan referred to the funeral customs prevalent among the Indians; to the various modes of their disposal of the dead: to the Great Festival of the Dead, as in vogue amongst the Hurons; and to the practice of burying with the deceased such articles as weapons, pipes, and crockery, mostly rendered useless by fracture so as to liberate the spirit of the object, and place it on the same plane with the deceased himself.

MARRIAGE LAWS AND CUSTOMS OF THE CYMRI.

By R. B. Holt.

The Laws and Institutes of Wales, published by the Commissioners of Public Records, contain much curious and valuable information respecting the old inhabitants of that country.

In this paper I purpose dealing with the marriage laws and customs as therein described.

Among the Cymri a wedding was said to be a mote of concurrence—"a respectable mote and a mote of constraint because it could not be dispensed with by a country and kingdom."[1] But though the law required that every man should have a "lawful wife" before he could hold a public office, and the Christian priests persistently upheld the sanctity of marriage, the Cymri regarded the objection that some had to an indissoluble bond as perfectly natural and reasonable.

While, therefore, the law was very severe on infidelity and made the oath of one who had broken his marriage vow of no effect, concubinage was a recognised institution, and the woman who accepted this inferior position was neither despised by the virtuous, nor to be left without suitable provision, unless she forfeited her repute by scandalous viciousness.[2]

There were, in fact, three recognised forms of concubinage.[3] First, a man cohabiting with a woman and their having one house in common, "without marriage and without investiture of kindred." This was the most usual and honourable form, and the marriage fee had to be paid to the woman's lord.

This, which was termed "a house and home concubinage," could not remain an irregular relation for an indefinite period.[4] It became a legal marriage at the end of seven years. This is confirmed by Gildas,[5] who addressing Maelgwn, King of North Wales, says that "he is not legally married, but the queen *is* his wife by right of the time she has been with him." Now evidently if a concubine could thus be publicly recognised as queen, that state could not be a very degraded one.

The second form was "taking a woman by gift and investiture and then separating from her." This was done when a bride was found to have been unchaste. A marriage thus dissolved was nul and the lord had no fee.

The third form was "a" woman living in a notorious and scandalous manner.

[1] *Welsh Laws*, B xiii, C i, Parts 1 to 9.
[2] *Dimetian Code*, B iii, C ii.
[3] *Welsh Laws*, B xiv, C x, p. 30.
[4] *Venedotian Code*, B ii, C i, p. 30.
[5] *Hist. Brit.*, Sec. 35.

A common prostitute had no privilege[1]: the law says, "though a rape be committed upon her she is not to obtain compensation"; but then follows this mitigating clause. "If she be insulted let her saraad (damage) be paid according to the privilege of her brother and her galanas (blood money) if she be killed."[2] So the protection that was personally refused was indirectly secured to her.

When a man took a wife by gift of kindred and deserted her before the end of seven years, if she was the daughter of a *breyr* (baron), he had to pay her a dower of three pounds and her virginity fee of one pound, besides repaying her wedding fee of six score pence. If she was the daughter of a *taeog* (peasant), the amounts were one pound and a half: six score pence and twenty-four pence respectively.[2]

If a man repudiated his promise to provide for a girl he had seduced and she urged her claim legally against him, she was to be credited: "for her word is conclusive of her purity; since he took her to a place where there were no wedding guests."[3]

A father was entitled to take back a daughter who had gone away without the advice of her kindred.[4] In such a case she did not lose any claim she might have on the man who had abducted her, and her lord had his wedding fee as if she was legally married.

In informal marriages if the man slept with the woman three nights from the time the fire was covered till it was uncovered in the morning and then wished to separate, he was to give her one ox, worth twenty pence, another worth thirty pence and a third worth sixty pence.[5]

During the probationary term of these cohabitations all that a woman possessed remained absolutely her own and, if a separation occurred, she was also entitled to three steers, whose "horns and ears were of equal length."[6] If the connection continued till within three nights of the seventh year, the law says, "A sharing is to be made with her in halves as with a betrothed wife; because a wife whether abducted or betrothed continues on the privilege of her dower only unto the end of the seventh year."

Respecting such a sharing the law is curiously precise.[7] "The wife was to share and the husband to choose of the things which the law did not share between them, but these were not many." The swine went to the husband. If there were sheep and goats, the sheep went to the husband, the goats to the wife. If there was only one kind they were to be shared equally.

Of the children: the eldest and youngest went to the father, the middlemost to the mother.

The household furniture was to be thus divided. "All the milking vessels except one pail, to the wife, and all the dishes, except one dish. She was also to have the use of the car and the oxen to convey her furniture from the house. The

[1] *Ven. Code*, B ii, C i, p. 80.
[2] *Dim. Code*, B ii, C xviii, p. 1.
[3] *Ven. Code*, B ii, C i, p. 26.
[4] *Dim. Code*, B ii, C xviii, p. 14.
[5] *Ven. Code*, B ii, C i, p. 31.
[6] *Ven. Code*, B ii, C i, p. 30.
[7] *Ven. Code*, B ii, C i, pp. 2, 3, 4.

husband was to have one pail, one dish and all the drinking vessels. He was to have the riddle, the wife the small sieve. The husband was to have the upper stone of the quern, the wife the lower one. The bed clothes that were over them belonged to the wife, those which were under them to the husband: but if he marry again they were to be given up to the wife." If the new wife sleep upon them let her pay "face-shame to the other," said the law. To the husband belonged the kettle, the bed coverlet, the bolster of the dormitory, the coulter, the fuel axe, the auger, the settle and all the hooks but one: that went to the wife.

To the wife belonged the pan, the trivet, the broad axe, the hedge bill, the plough share, all the flax, the linseed, the wool, and the house bag with its contents except gold and silver, which, if there were any, were to be shared. The husband was to have the barn and all the corn above ground and under ground. He was also to have all the poultry and one of the cats; the rest were to belong to the wife. To the wife belonged the meat in the brine and the cheese in the brine: after they were hung up they belonged to the husband. To the wife belonged the vessels of butter in cut and the cheese in cut: also as much meal as she could carry between her arms and knees from the store room to the house. To each of them belonged their clothes except their mantles which were to be shared.[1]

"If the husband was privileged let him shew it (said the law) and after he has obtained his due let there be a sharing as is stated above."

This catalogue may be taken as giving the usual contents of a Cymric house, and the customary stock of a farm. It will be observed that no chairs, tables, chests, or bedsteads are named. It is therefore probable that for tables, posts were driven into the ground and planks nailed on the top of them, and benches of similar construction served as chairs. Neither are there horses or cattle in the farm stock, while the car and oxen are assigned to neither husband nor wife. The fair inference, therefore, is that these animals were owned by the hamlet or kindred, and that each freeman had only a conditional usufruct of the common property committed to him. The small prices put upon them confirms this.

At a separation a wife had the right to remain nine days and nine nights to ascertain if her divorce were legal, and the law ordains that "at the end of the ninth day let all her property go before, and, after the last penny, let her go herself."[2]

If the wife were pregnant at the time of the separation, the husband was to allow her a milch cow, a coat worth fourpence, a pan worth a penny, and a car load of the best corn grown on the farm.[3] After the birth of the child the mother had to maintain it for six months, if she were able to do so; then the husband had to make the same allowance as before for the next six months, and from thenceforth the father was to provide two-thirds of the maintenance of the child till, if a girl, she was twelve years old, at which age she could be married; or if a boy till

[1] *Ven. Code*, B ii, C i, pp. 6, 7, 8.
Ven. Code, B ii, C i, p. 34.

[2] *Ven. Code*, B ii, C i, p. 14.

he was fourteen, when he could be made over to the lord, and the parents would have no further responsibility for him.

But besides the property held by them in common, both husband and wife had their special belongings called their "exclusives."[1] The three exclusives of a man when he separated from his wife were 'his horse and the whole of his arms—the profit of his land, by which he was enabled to perform military service, and the compensation due to him for his wife's infidelity."

The three exclusives of a woman were her virginity fee—her compensation for her husband's infidelity and her compensation for an unjust beating.[2]

Besides her "exclusives" a woman was also entitled to a third of any compensation paid to her husband, whether for homicide or from any other cause.[3]

All chattels appear to have been common property, for, in case of a robbery, the husband was to swear that the thing stolen belonged to no one but to him and his wife, and the law explains that "he mentions his wife because she owns half the property if she be an endowed (lawful?) wife."[4] But she could only lend, give, or sell what the law specially permitted "because the husband is the chief while they are together, and it is most right to follow the chief."

This right to dispose of property was regulated by rank. The wife of a king, besides her personal property, could dispose of one-third of his casual receipts without permission.[5] The wife of a breyr might give away her mantle, her shift, her shoes, her head linen, her meat and drink and the contents of her store room; she might also lend all her furniture. The wife of a taeog might give nothing but her head-gear, and could only lend her sieve to be used within hearing of her voice reclaiming it from the dunghill.

Thus even in trivial matters the respective rights of man and wife were clearly defined and then as far as possible the law left them to settle their own domestic differences. When they were unable to do so, either could appeal to the kindred, and as that was an authority ever at hand, wrong could seldom be done with impunity.

The inferior position of a wife is clearly set forth in the Welsh laws, which say, "Over a woman is a dominating rod by the privilege of marriage; for the privilege of the husband's supremacy abrogates her privilege, so that she shall not be able to make any kind of personal obligation or promise, and on that account wives, or persons in a similar condition, cannot be compelled to become a party to an obligation of any kind."[6] After a formal marriage, however, this rule seems to have been modified, for the *Venedotian Code* says:[7] "A woman ought neither to buy nor sell without the consent of her husband unless she be married. If she be married she may buy and sell." A husband, too, might not repudiate a pledge given by his lawful wife, and she in turn was bound by his undertakings.[8]

[1] *Welsh Laws*, B xiv, C iii, p. 19.
[2] *Welsh Laws*, B xix, C xix, p. 20.
[3] *Ven. Code*, B xi, C i, p. 71.
[4] *Welsh Laws*, B xix, C xix, p. 4.
[5] *Ven. Code*, B ii, C i, p. 39.
[6] *Dim. Code*, B ii, C iii, p. 3.
[7] B ii, C i, p. 60.
[8] *Ven. Code*, B iii, C xiv, p. 41.

A woman was not admitted as a surety for nor as a witness concerning a man, neither could she be put to death for a crime committed in conjunction with her husband.[1] But if she committed theft or homicide without her husband's concurrence she alone was answerable.[2]

Like the men, every woman had her lord and, no matter what her rank might be, she paid her amobyr or marriage fee to him whether she wedded legally or informally. Whoever gave a woman to a man paid this fee; if she disposed of herself, she paid it herself.[3] If she gave herself without the advice of her kindred, her children lost all claim to a share of their kindred's land.[4] If the kindred gave her, the children shared with the others, only they were not to have the principal holding till the third generation.[5] If one of her children killed a person her kindred had to pay blood-money; on the other hand they received it if he or she was slain.

This bond of kindred was the essence of Cymric society, for by it every man and woman became entitled to share in the communal land and in the privileges associated with land holding. They also secured efficient support in the assertion of their natural and social rights and the advocacy of their chief whenever there was occasion for it. Women thus had their proper place in the kindred, and it was only by their own act that they could forfeit its protection or advantages. Her kindred paid for every offence a woman might commit, as if she were a man, till she married, afterwards husband and wife paid damages and fines between them.[6]

On her own account a woman neither paid nor received blood-money[7]; neither could a married woman be an accuser, but she could prosecute for the taking of her property.[8]

When a woman married her privilege merged in that of her husband, and in consonance with this privilege and the dictate of the law she could not return to the privilege of her kindred though, as we have seen, her children could do so.[9] Still, though merged, her privilege was not utterly extinct, for when a man despoiled his wife—took another woman into the house against her will, or turned her out of it, that was termed "a shame to the kindred," and they were seldom slack in vindicating their honour.[10] So a Cymric wife was not to be abused with the practical impunity that is one of the bitter fruits of our own civilization.

For seven years the husband's kindred were responsible for the wife's dowry, but when a woman was given to a man, and her property specified, if a single penny was withheld from him he might separate from her on that account, and she could not reclaim anything.[11] Her virginity fee also must be specified, and whether it was to be paid in money or otherwise, before she left her bed on the morning after the wedding night, otherwise her husband was not liable for it.

If a man proved to be leprous, had fetid breath or was impotent, a woman

[1] *Ven. Code*, B ii, C i, p. 66.
[2] *Welsh Laws*, B xiv, C xxv, p. 5.
[3] *Ven. Code*, B ii, C i, p. 28.
Dim. Code, B ii, C xxii, p. 36.
[4] *Dim. Code*, B ii, C xxiii, p. 35.
[5] *Welsh Laws*, B xiii, C ii, p. 136.
[6] *Ven. Code*, B ii, C i, p. 71.
[7] *Welsh Laws*, B xiii, C ii, p. 247.
Ven. Code, B ii, C i, p. 70.
[8] *Welsh Laws*, B xiv, C xxxviii, p. 10.
[9] *Gwentian Code*, B ii, C xxxix, p. 10.

might leave him and claim the whole of her property.[1] If her husband was unfaithful to her, for the first offence she could claim six score pence, and whatever she thus obtained was absolutely her own.[2] For a second offence the husband had to pay a pound, but if she did not separate from him on the third occasion, she was no longer entitled to satisfaction.

When a married woman was "scandalized" on the first occasion, she could exculpate herself by the oaths of seven women; fourteen were required to rebut a second charge, and on the third occasion she had to produce fifty cojurors.[3]

The law was very severe against a wife's unchastity. At a marriage an assurance of the bride's virginity was commonly given, and if the husband found her impure he was to call the marriage guests to him, candles were to be lighted and her shift was to be cut behind her to the height of her buttocks, and before to the height of her pubes, and then he was to send her off with a thrust. For this blow she had no redress.[4]

If the husband allowed her to remain till the following morning he could not take away her due, and she was allowed to exculpate herself by the oaths of seven persons including her mother, her father, her brothers and her sisters.[5] If she would not be exculpated, the well greased tail of a yearling steer was passed through a hole in the barn door, and if she, standing inside, could hold the animal while two men, outside, beat it with sticks, she was to have it. If she could not hold it, the law, with coarse humour, says "let her have the grease for her pains."

When a woman left her husband the step was irrevocable, for the law says "every woman is free to go but she is not revenant."[6]

It was otherwise when a husband divorced his wife, for that did not extinguish his claims on her. According to law,[7] "If a man parted from his wife, and she were minded to take another husband, should the first husband repent having parted from his wife, and overtook her with one foot in the bed and the other out of it, the prior husband was to have the woman," only when *he* married again was she finally free for "no man was to have two wives."[8]

If the woman wished to return and her husband consented to receive her, he was entitled to claim three kine from her.[9] Where there had been fault on both sides the man was not allowed to profit by his spouse's delinquency, for "if a woman were abandoned for her crime by an unfaithful husband she did not forfeit her due."[10] "If a married woman met her husband's concubine and beat her with her hands till she died neither compensation nor blood money was to be paid for her."[11]

This marks an equitable distinction. A woman might be the concubine of an unmarried man without entirely losing social consideration; but if she stood in that relation to one who already had a lawful wife, she sank into the lowest class, and the law refused to give her any protection against the woman she had injured.

[1] *Ven. Code*, B ii, C i, p. 10. [2] *Ven. Code*, B ii, C i, p. 31. [3] *Dim. Code*, B ii, C xviii, p. 25.
[4] *Gwen. Code*, B ii, C xxxix, p. 13. [5] *Ven. Code*, B ii, C i, p. 276.
[6] *Ven. Code*, B ii, C i, p. 55. [7] *Ven. Code*, B ii, C i, p. 18.
[8] *Ven. Code*, B ii, C i, p. 54. [9] *Dim. Code*, B ii, C viii, p. 17.
[10] *Gwen. Code*, B ii, C xxix, p. 27. [11] *Dim. Code*, B ii, C viii, p. 61.

When a Cymric woman was given in marriage to an alien her son was entitled to a brother's share in the patrimony of her kindred, but was neither to have the privileged holding nor an office, but his grandson became entitled to full privileges.[1] If, however, the alien was an Irish or Saxon nobleman, the son had full privileges at once and the law says, "for such cattle, without suretyship, were to be paid," and explains that "these were called 'cattle without surety' on account of their being the share of the foreign father imposed upon the kindred of the mother, since there were no kindred of the father to pay."

This is apparently an innovation on the ancient law, as such a provision could not have been made before the Saxons conquered Britain, though it might have been a privilege that the Irish possessed previously.

If a bond alien took a wife without leave, his lord was to punish him, and even were she a free Cymric woman the children belonged to the lord of the land.[2]

If a free man took a bond woman as his concubine the lord could at any time reclaim her; but by a legal marriage the husband acquired the right to retain her in defiance of the lord, and their children were free.[3]

This was an admirable law tending to limit slavery and to promote morality. It also shows how subordinate was personal property in a slave among the Cymri. Every free man had power to confer freedom on a bond woman, and to take her and her children from her lord without giving any compensation. The lord, therefore, had no absolute property in her, but only the use of her services subject to the law and the privilege of kindred.

If a household slave became pregnant he who was the cause of it had to provide another woman equal to her to serve in her room until her delivery, and was to rear the child after it was born.[4] If the woman died in delivery he was to pay her legal worth to her lord. Whoever had connection with a bond woman without the consent of her lord had to pay twelvepence on each occasion.[5]

This latter clause is unpleasantly suggestive of a customary trade in vice which nothing can justify; but when we remember that not very long ago the Bishops of Winchester sold women licences to practice prostitution in London, our own shame hinders us from pronouncing too harsh a judgment on those who lived in ruder times and had a standard of morality different from our own. At any rate their laws respecting an "unfortunate" were just and kindly.

"A female of bush and brake," after her delivery, was only to rear her offspring for the swaddling month "because, as she received none of the substance of the man, the law did not see it right for her to suffer on his account."[6] Further on it is said "the mother of an illegitimate child nursed it for three months, after which the father provided all necessaries."[7] These are specified thus. "First he is to give the mother a sheep with her fleece and her lamb, and then a caul of tallow, or a penny, and an iron pot or four legal pence, and a menaid of wheat to make pap

[1] *Welsh Laws*, B iv, C i, p. 32.
[2] *Welsh Laws*, B vi, C i, p. 12.
[3] *Dim. Code*, B ii, C xix, p. 43.
[4] *Ven. Code*, B ii, c i, p. 47.
[5] *Dim. Code*, B ii, C xviii, p. 51.
[6] *Dim. Code*, B ii, C xviii, p. 5.
[7] *Loc. cit.* p. 13.

of, and a car-load, drawn by two oxen, of fuel; and two ells of white or party coloured cloth to put around the child; and a milch cow and her calf; and three car-loads of wheat, barley and oats; and three car-loads of fuel."

Thus the payment that was demanded in such cases was considerably more than was awarded to a divorced wife. This is accounted for by an initial sentiment of Cymric law by which marriage was made the duty of a man, while to a woman it was a privilege, the exercise of which entailed serious responsibilities on the kindred; consequently where there was not even an informal marriage and no such responsibilities existed, the father was very properly called upon to answer for the consequence of his own act.

The Cymric law placed much power in the hands of a husband.[1] "He was even allowed to chastise his wife if she spoke 'an ireful word' such as wishing drivel on his beard, or dirt between his teeth, or called him a cur, or if she gave away anything she was not entitled to give, or if she was found in a covert with another man."[2]

For the two first offences she had the option of paying him three kine. When she accepted the chastisement she was to receive "three strokes with a rod of the length of her husband's forearm and the thickness of his long finger, and that wheresoever he might will, excepting on the head." The law therefore provided that she should suffer pain only, and not receive injury; it also denied any other compensation to a man who exercised this right.

How much the Cymri strove to attain national purity is constantly evinced by their laws, and they fully recognized that in the modesty of women, rather than in the self-restraint of men, lay the best antidote against sensuality.

If a wife kissed another man her husband could repudiate her.[3] If another man kissed her either with or without her consent the husband had his saraad, with one-third deduction.[4] For a criminal act the compensation had to be paid in full.[5]

Kissing, however, was permitted in a game called "rope playing" at a carousal,[6] or when a person arrived from a long distance, so there was no wish to destroy the amenities of life by a perverse puritanism; consequently while impure kisses were made penal, harmless social osculation was expressly sanctioned by the law.

Where there was fault, however, the injured man could obtain compensation only if his marriage was lawful,[7] for a recognised concubine might have as many lovers as she pleased, and neither they nor she be liable to compensate the husband for their improprieties. His only remedy was to repudiate his wife and that involved his paying all that was due to her.

Mention has been made of a woman's amobyr. This was the equivalent of a heriot; or the debt due to his or her lord from a dead person. When a woman

[1] *Vend. Code*, B ii, C i, p. 39.
[2] *Welsh Laws*, B v, C ii, p. 148.
[3] *Dim. Code*, B ii, C xviii, p. 31.
[4] *Loc. cit.*, p. 34.
[5] *Loc. cit.*, p. 33.
[6] *Loc. cit.*, p. 35.
[7] *Loc. cit.*, p. 54.

ceased to belong to a kindred she was practically dead to it, consequently the chief of that kindred was forthwith entitled to claim his due.[1] As no person can die more than once no amobyr was paid on a subsequent marriage neither was a heriot due on the death of a wife.[2]

An amobyr accrued in three modes:—one by gift and delivery before a woman was slept with; the second by open cohabitation, though there was no gift, or delivery of the woman; the third was by her pregnancy, when the man who caused it had to pay.

The Cymri attached great importance to this fee, and endeavoured to provide for every contingency respecting it; thus we read, "If a woman be given to a man and after that she be affiliated to another father; if the lord of the father to whom she is affiliated demand the amobyr on account of the marriage she had entered into, before she was affiliated to her new father, she now being a daughter of his man, and he having not obtained her amobyr, the law decides that he is not entitled to it, for two causes. One is that only one amobyr is due from a woman and *that* she has paid. The second is that she has not married since she was affiliated to her new father, and that, whatsoever she may have done among the family she was originally in, neither claim nor surclaim is to follow her into the other family into which she has come. But if she has not paid her amobyr to the lord of her former father, let her pay to the lord of her new father, since the nuptials are not complete till her amobyr shall be paid." In this case she and her children would presumably lose all claims on her kindred by birth.

Among the Cymri, then, there was an informal civil marriage which was probably universal in pagan days; and one attended with religious ceremonies which the priestly law-writers termed a lawful marriage and by which very considerable advantages were secured for the woman.

Both, however, were held to be relations into which virtuous people might enter without loss of reputation and in which they were required to respect the national code of morality. Still a superior sanctity was supposed to be imparted by a priestly benediction, so only these men who had acquired the Church's sanction to their union were permitted to hold office in a kindred. This, however, was a modern innovation for, as we have seen, Maelgwn was king though he only had a concubine.

Clandestine intercourse or public prostitution was prohibited, and offenders were punished by the loss of valuable privileges.

[1] *Ven. Code*, B ii, C i, p. 54. [2] *Loc. cit.*, p. 41.
[3] *Welsh Laws*, B v, C ii, p. 100.

NOTES ON THE EXHIBITION OF AN ETHNOLOGICAL COLLECTION FROM SANTA CRUZ AND THE NEW HEBRIDES.

By John Jennings, Esq.

During a recent visit to Santa Cruz and the New Hebrides, Mr. Jennings was fortunate in obtaining an interesting collection of weapons and domestic implements, used by the natives of those islands, and gaining much valuable information concerning their habits and customs. The bulk of this collection, numbering about 200 objects, was exhibited at a meeting of the Anthropological Institute on June 14th. Among the most important items from Santa Cruz is a specimen of the rare feather money, made from fibre in a double coil, 2 fathoms in length and 3 inches wide, on the outer side of which innumerable small red feathers in overlapping rows are attached by means of a resinous substance; enclosed within the coils are placed a number of charms each supposed to possess distinctive protective properties, and invariably found associated with them. The whole is enveloped in a series of tappa wrappings, enclosed in a woven bag or purse. So highly is this money esteemed that it is seldom to be procured or even seen. When being displayed by the fortunate possessor, it is loosely wound around a bamboo supported horizontally upon two upright posts and rarely is anyone but the owner permitted to handle it. It is usually kept with other valuables of a perishable nature upon a platform over the fire, the smoke and heat affording protection against damp and insects. The commoner form of money is made from small discs of shell and cocoa-nut wood, strung upon fine sinnet in two-fathom lengths. Specimens of "tappa" cloth having various oblong designs in black pigment are interesting; each pattern represents a natural object well understood by the natives, as "a yam," "a river," "bananas," "bread-fruit," etc., and although these objects are but symbolically depicted they afford a system of amusement combined with instruction. These pictographs are frequently met with upon other objects and invariably occur upon the light wood clubs used in ceremonial dances. Clubs are not used in Santa Cruz as weapons, neither is the spear known, every man being sufficiently equipped with a bow and a handful of arrows, the latter being highly carved and painted red, white and black. Examples of the men's dresses, betel bags, mats and other objects woven from banana fibre, exhibit great skill and care in their execution, the ornamentation being geometrical designs woven in black fibre, enhanced by braided openwork, fringes and tassels. These objects are all made with small hand looms by men only, the women and boys being permitted to make coarser articles, sails, etc. Ornaments of shell and tortoise-shell are only worn by the males. Large discs of ground "tridacna" shell having a pierced

ornament of tortoise-shell attached to the centre are worn upon the breast suspended by a cord of sinnet; discs of tortoise-shell, sometimes exceeding 2 inches in diameter, are worn in the nose and are placed in the septum when the child is only a few weeks' old; small rings are also worn through the side of the nose. Earrings and pendants are made from tortoise-shell, and are worn in such numbers as to draw the pierced lobe down to the shoulder, often severing it by their excessive weight. Armlets and bangles of strung shells and ground "tridacna" are frequent. The native fishing apparatus is both simple and ingenious:—sharks, attracted by halves of cocoanuts strung upon circles of cane rattled against the sides of the canoes, are caught by a looped rope being slipped over the tail and made taut. Kites made from tappa and cane are used for driving flying fish, which are caught by boomerang shaped hooks of tortoise-shell attached by short lines to weighted floats. Fishing lines and nets of very neat and strong sinnet are covered with a resinous waterproof substance. Models of canoes, hollowed from tree trunks by means of shell adzes and fitted with outriggers and platforms, represent the three types used for fishing within the reef; in deep water and for making long voyages, the last named, carrying a very large sail, is provided with a deck house as a store and refuge in bad weather. Paddles are well finished and have long leaf-shaped blades with a mid rib for strength; they are often well carved with representations of the frigate bird. Adzes, having blades of regular shape and with a fine cutting edge, are made from shell of "tridacna," bound in a socket of light wood, and attached to long hafts by sinnet. They are of "reversible" pattern and are used for all purposes, the smaller for hollowing food bowls, bailers and other small objects, the larger for cutting down and shaping the heavy timber used in their houses and canoes. These as well as the knives, scrapers and spoons made from nautilus shell are being superseded by the "trade" axe and knife Various tools, as described, as well as needles, lances and other small objects made from bone, shell, wood and tortoise-shell were exhibited. A tattooing implement deserves attention. It is made from a very small piece of tortoise-shell having a bifurcated point inserted in a thin section of bamboo; with this the flesh is punctured by a sharp fillip of the finger and thumb of the right hand, the implement being held lightly in the left; the wound thus made is rubbed with the soot of candle nuts. The collections made in the New Hebrides, Torres and Banks Islands include dresses, ornaments, tools, and weapons from various localities; the clubs and spears used in the pig-killing ceremonies, as well as dresses and masks used on those occasions, will receive special attention at a later period. Various types of feathered arrows, as well as native "forgeries" of the same, are of too great an interest to here receive the attention they deserve. A fine collection of adzes —many hafted—as well as carvings, charms and numerous other specimens collected at a subsequent period in New Caledonia, were also shown. A forked stick used for taking oaths, from New Caledonia, and a sacred wood carving from the Loyalty Islands, as well as other sacred objects in stone from the same place, received special attention.

ANTHROPOLOGICAL REVIEWS AND MISCELLANEA.

Readers of the Journal are invited to communicate any new facts of especial interest which come under their notice. Short abstracts of, or extracts from, letters will be published at the discretion of the Editor. Letters should be marked "Miscellanea" and addressed to The Secretary, 3, Hanover Square, W.

Deniker's Classification of the Races of Europe.

[WITH PLATE XV.]

A most notable work upon the physical characteristics of the races of Europe by Dr. J. Deniker, Librarian of the Musée d'Histoire Naturelle, at Paris, is about to appear in the forthcoming *Compte Rendu de l'Association française pour l'Avancement des Sciences;* and in even more extended form in the *Mémoires de la Société d'Anthropologie* at Paris. Its character and general conclusions have been already made known to us in two preliminary articles.[1] Their interest and value prompt us to take note of their contents even in advance of the final publication of the whole work.

Let us at the outset state most positively that, so far as one can judge from the preliminary sketches, the work promises to be of the very highest scientific importance; it betrays a zeal in the examination of original sources, as well as a careful discrimination in their correction and digestion, which cannot be too highly commended. The author seems to have exhausted almost every possible source of information as to the cephalic index, the colour of the hair and eyes and the stature of the European peoples in all the known languages. In the course of our studies upon the subject,[2] and especially in the attempt to prepare an exhaustive Bibliography of the anthropology and ethnology of Europe for publication by the Boston Public Library, we have had occasion to examine every discoverable authority in the original. Nearly two thousand titles have been collected, especial attention, through the aid of translators, being paid to the more difficult Slavic languages. It must be confessed, in spite of this care on our part, that Deniker has succeeded in presenting results from a half dozen printed sources which were unknown to us. Two or three he has apparently omitted, such as Zakrezewski in Poland, De Man in the Netherlands and others of recent date—Blind Pitard, Gray, etc. On the other hand, he presents some entirely new data on the cephalic index from the manuscripts of Bassanovitch as to Bulgaria and Ferroz y Macedo as to Portugal. Bassanovitch has already given us one

[1] "Les races européenes," *Bull. Soc. d'Anth.*, Paris, 1897, pp. 189–208 and 291–302; "Les races de l'Europe," *L'Anthropologie*, ix, 1898, pp. 113–133; with map.

[2] *L'Anthropologie*, vii, pp. 513–525, and also "The Racial Geography of Europe,' Appleton's *Popular Science Monthly*, February, 1897, to March, 1898, inclusive. The latter will shortly be published in New York and London, with many additions, as a separate volume.

good monograph on his country; but Deniker's data add much to our knowledge. Portugal has till now been a *terra incognita* to the anthropologist, although Spain redeemed her reputation in that respect several years ago. This new material is therefore of great interest and value. If there be, indeed, any excuse for adverse criticism of this first part of his work, it would be in the apparently defective bibliographical methods. Names seem to be frequently misspelled; with here and there a date or volume misstated. Yet we will not prejudge the final work by these preliminary and hasty sketches. It would be fairer to ascribe these slips to careless proof-reading rather than to really grave errors in the manuscript.

Deniker's raw materials—his data as to cephalic index, colour of hair and eyes and stature—differ only in slight detail from our own; albeit, they were apparently collected in entire independence of one another. That is a comforting circumstance, which strikingly serves to confirm the fundamental accuracy of each. Only in one or two details do we take exception to his data. Thus in Holland, the extremely brachycephalous spot at the mouth of the Scheldt, does not seem to be sufficiently emphasized by him.[1] In Denmark, where we all are obliged to confess lamentable paucity of observations, there is also a discrepancy with our own figures as to the head form. Deniker, for example, assigns a cephalic index to it of about 77; that is to say, making it strongly Teutonic. Now, Beddoe's series[2]—the best we have—gave a much higher figure, viz. 80·5. Probability, especially the distinct broad-headedness of the southern Norwegians, just across the Skager Rack, as shown by Arbo,[3] shows a decided bent in this direction also. That the same brachycephalous element which has so infected the delta of the Scheldt is in Norway again in evidence seems to us beyond doubt. Beddoe certainly agrees in this view. In a few other minor details of this kind our data differ; but, as we have said, in the main the physical characteristics of the living population of the greater part of Europe are too well proven to permit of any divergence of testimony. Deniker has rendered a great service to anthropology by bringing the material as to cephalic index into convenient form for direct comparison. It is earnestly to be hoped that his later publications upon stature and pigmentation will be of equal value.

Here are the data on which all authorities are now perfectly agreed. I give them in his words: "The cephalic index is grouped in four regions: one dolichocephalic with an encircling zone of mesocephaly in the north (Scandinavia); a more strongly dolichocephalic one in the south (Mediterranean); a very broad-headed one in West Central Europe (Alps); and finally a sub-brachycephalic one in the east centre." (Russia, etc.). These relations were emphasized in our map of cephalic index in *L'Anthropologie* two years ago, to which reference has already been made.[4] It should be said here in justice, however, that the material on the cephalic index of Slavic Europe is here most ably collated by Deniker for the first time in print.[5] Our own data for this region, collected from entirely independent examination of the original Slavic sources, agree with his almost exactly. In places we have made use of some of his manuscript data above mentioned; for which due acknowledgment is here made. To Deniker, then, belongs the full credit for the first publication of the figures in these papers: his knowledge of Slavic authors is indeed most complete.

[1] See our map in *Popular Science Monthly*, lii, 1897, p. 315 *et seq.*

[2] *The Races of Britain*, p. 233.

[3] His map is reproduced in *Popular Science Monthly*, lii, 1897, p. 158.

[4] See also *ibid.*, l, 1897, p. 591.

[5] In "Russia and the Slavs," *ibid.*, October, 1898, we have just published our own results with maps and portrait types.

Our agreement with Deniker as to the main facts of stature distribution—although here his data are not yet published in any detail—is equally close; we judge from his knowledge of the cephalic index that it will be equally profound. Thus he concludes: "There are three centres of very tall population: one in the north (British Isles, Schleswig, Scandinavia, etc.) and two in the south (Bosnia, Servia, Dalmatia, and the eastern Caucasus). On the other hand, there are three centres of relatively short stature: one in the south (Spain and South Italy); one in the centre (Poland, Bavaria (?), Hungary), and one in the north-east (Lapps, and Russian aborigines)." Behold here again a perfect corroboration of our results.[1] Not to weary the reader with further details, let us dismiss the subject by giving our hearty approval to all his deductions as to the colour of hair and eyes as well. He has not yet published any details; but enough has been said to show substantial agreement.

Now we reach our apparent dilemma. From almost entire agreement as to the distribution of the three principal physical characteristics *each* by *itself*, Deniker reaches widely different conclusions as to their *combination* into racial types, from nearly every standard authority in Europe. We have recently in a general summary of the evidence,[2] found no occasion to differ from the opinions of Beddoe, Broca, Collignon, Livi, Topinard, and a host of others. These anthropologists all affirm the existence of three main racial types. These are: first, a tall long-headed blonde (Teutonic); secondly, a medium-statured, grey-eyed, brown-haired, and very brachycephalic type (Alpine or Celtic); and, thirdly, a short, dolichocephalic and very brunet race (Mediterranean or Iberian). Many admit the existence of a fourth sub-variety of the second and third in the dark, brachycephalic *but very tall*, type of Bosnia, Dalmatia, and the west Balkan States. Our author's very positive indication of this last as a permanent type is well worthy of consideration. Deniker differs from all others in combining his three separate physical traits into six principal races and four or more sub-races, to which entirely new names, unknown to anthropologists heretofore, are assigned. This seemingly unnecessary rejection of time-honoured names adds greatly to the difficulty of comparing his conclusions with those of others. For at least two of his combinations are like the commonly accepted ones. His "Nordic" type corresponds to the classical Teutonic; his Occidental or Cevenole is merely our old friend, the Celtic or Alpine type. He has, however, a good name (Adriatic or Dinaric) for the tall variety of the brachycephalic population of the north-west Balkan Peninsula, which seems well adapted to it. As to his other seven, they are merely sub-divisions of the three classical races. Thus, for example, our author splits the classic Mediterranean race into two groups (and we freely confess the fact of an existing difference of stature between them)—one tall, which he calls Atlanto-Mediterranean; and one short, named the Ibero-Insular. Thus it goes. There is a "sub-Nordic," a "Vistulan," a "Nord-Occidental," and so on. Fortunately, it is not necessary for us to attempt a comparison of these in detail.

The fact that from the same data such widely variant racial conclusions may be drawn is, at first sight, calculated to shake one's confidence in the whole attempt at a systematic somatological classification of the population of Europe. This we believe to be an unjustifiable inference. Deniker is too well equipped an anthropologist to go astray in such matters; and certainly the eminent names which we have just cited,

[1] Compare map in "The Racial Geography of Europe; IV, Stature" (*Popular Science Monthly*, li, 1897, p. 30). Reproductions of the great maps of stature for eastern Europe, after Anutchin, Zakrezewski, von Goehlert and others, are given in the article on Russia above noted.

[2] *In extenso*, in *ibid.*, li, 1897, pp. 192–207.

in favour of a simple tripartite division of races, preclude the chance of their being in error. What, then, is the matter? After a patient examination of Deniker's scheme, we claim to be able to reconcile both views. Unless this can be done, scientifically, someone must be proven in serious error.

The controversy involves, it seems to us, a question which has been much discussed of late by naturalists concerning the definition of the word "type." For in anthropology the term "race"—alas! so often lightly used—corresponds in many respects to the word "type" in zoology.

Deniker's elaborate scheme of six main, and four secondary, races is, in reality, not a classification of "races" at all, in the sense in which Topinard and others have so clearly defined it.[1] It is rather a classification of *existing* varieties. Here is Topinard's definition of the word "race": It is "in the present state of things an abstract conception, a notion of continuity in discontinuity, of unity in diversity. It is the rehabilitation of a real but directly unattainable thing." Apply this criterion to Deniker's six "races" and four "sub-races." Is there any ideality about them? Is there any "unity" in his scheme? If you think there may be, glance for a moment at his map (Plate XV). Italy is resolved into no less than five distinct "races." Norway, simple and retiring peninsula that it is, comprises four of these, exclusive of the Lapps. What say Livi and Arbo to this? And the British Isles! How can we describe their intricate maze of "Nordic," "sub-Nordic," and "Nord-Occidental" with nearly all Scotland and half of Ireland indicated as "unknown"? Dr. Beddoe, where is he? and Davis and Thurnam, the Anthropometric Committee, and all the rest? Is there anything "unattainable" about these? Certainly not. Does this prove then our author in error? With equal positiveness, no. His so-called "races," as we now see, are real, actual, living combinations of traits as they exist in Europe to-day. You may safely take Deniker's map in hand, and, going to any region you please, you will surely find the population there to be outwardly just as he describes it. No surer guide could be found. That is why the map, and the schematization is so elaborate; why it seems to lack that "unity in diversity," which we should seek. You are not discovering "races," in fact, at all. You are viewing *existent*, but not *ideal* types, which may once have existed, but may be now dissolved in a generalized mean. You are in possession of a living picture of the population of Europe *as it stands*, with all its complexities, its contradictions, and anomalies; but you will find no key to the relations of the several parts revealed, nor any idea of their possible origins.

How, then, are we to discover this ideal, this elusive, "racial type"? How are we to reach the conclusions of the great body of anthropologists in Europe as to the existence of three "races," and no more? The process seems to us simple. Three steps must be taken; three, which Deniker, in laying his superb foundation for future use, has not yet had opportunity to take. These are: first, to eliminate all disturbing factors, thus being sure that no elements save those of hereditary descent are in evidence; secondly, to seek for similarities, and not diversities of traits, turning the pages of the book of life backward—making use, that is to say, of the data both of historical ethnology and prehistoric archæology; and, thirdly, utilizing the probabilities of geography in seeking the affinities between divergent types. Only thus may we boil his "races" down. In this wise alone may we attain that "unity in diversity"

[1] "De la notion de race en anthropologie" (*Revue d'Anth.*, série 2, ii, 1879, pp. 589–660); and more recently in the *C. R. Congrès int. d'Anth.*, Moscow, 1893. We have discussed this more fully in our "Racial Geography of Europe," chapter v; "The Three European Races," above cited.

which we seek; and we may thus pass imperceptibly from the real existent type to that of the "abstract" and "unattainable" concept, which we term race. And we see that, after all, both Deniker and his opponents are right in fact; they differ only in their use of this single word.

The primary reason why, we affirm, Deniker has not carried his analysis far enough really to have discovered "races" lies in his neglect to eliminate all the modifying influences of environment, physical or social; of selection in its various phases; and of those other disturbing factors; which, together with the direct and perhaps predominant influences of heredity, constitute the figure of man as he stands. Wherever Deniker has spied a more or less stable combination of traits, he has hit upon it as a race, to paraphrase a well-known injunction. It is a case of too devoted attachment to the school of Broca; to the neglect of the admonitions of the followers of Villermé. If a certain group of men be discovered short of stature they are at once assumed to be so by virtue of heredity. This is not always the case. For example, on Deniker's map of races, a "Vistulan" sub-type, so-called because of its prevalence among the Poles, is set apart because of its very short stature; from the main body of the Russians, who are termed "Oriental" by race. Is this justifiable? Consult Zakrezewski's fine monograph on this country,[1] and it will be seen that the apparent short stature of the Poles is largely due to the presence of a vast horde of Jews, who by their inter-marriage have depressed the average for the country unduly. Is this mere political chance, the result of a few decrees of the Polish kings, to be allowed to father even a "sub-race"? Make allowance for this, and the Poles, it seems to us, fall at once into their proper place among the other Slavs.

A number of modifying factors are competent to effect a change of stature in a group of men. Deniker disregards this fact. Because of local differences of stature all through the brachycephalic middle zone of Europe, this great population, which has more and more universally been recognized as fundamentally a unit by descent from a broad-headed Celtic (?) ancestry, is by Deniker broken up into a number of sub-types. Wherever the broad-heads happen to be tall, they are set apart from the "Occidental" (Alpine) race by our author, and attributed to the "Adriatic" race, that darkish, very broad-headed, but, in contradistinction to the other brachycephals of central Europe, *very tall* type which certainly prevails in Bosnia, Servia and Dalmatia. Thus the proverbially tall population in the Rhône-Saone valley, which all other anthropologists since Broca have been content to consider tall by reason of an infusion of Teutonic blood from a Burgundian ancestry, is by Deniker attributed to the presence of this far-distant "Adriatic" or "sub-Adriatic" type. This is in utter defiance of geographical probability; it sets aside all historical evidence thus to herd the Burgundian and the Bosnian together. What if both are tall, brachycephalic and darkish in complexion? Is there no other explanation in natural science to be found? The Adriatic type is thus scattered broadcast all over Europe, by our author, wherever a darkish and broad-headed contingent happens to be tall. One bit lies isolated just east of the Black Sea; a second in south central Russia; and again in the lower Loire valley, in Provençe, in Switzerland, in northern Italy. Call these "combinations," as we have said, if you please. Far be it from us to deny that they exist where indicated on the map. But who can say that the originally broad-headed peasantry in Burgundy are not tall because of the surpassing fertility and material prosperity of the Côte d'Or, with the addition perhaps of a strain of tall Teutonic blood, just as the Poles are stunted because of the intermixture with Jews? The two local anomalies are perfectly explicable by

[1] *Wzrost w Królestwie Polskiem* (*Zbiór wiad. do antrop. kraj.*, Kraków, xv, 1891, dział 2, pp. 1–39, with maps).

other means than to resort to the theory of race. That is the explanation to be adopted only when all environmental or other disturbing factors have been eliminated.

Just a word of minor criticism by way of interlude. Our author's map of the distribution of "races" seems to us a bit too minutely detailed to merit the fullest confidence. A little generalizing where specific data are not over-abundant would seem to yield a nearer approximation to the truth. Minute detail for outlying parts of the continent, where observations have been by scores and not by thousands, awakens distrust. Our author is fully acquainted with the best that is known; but even that is often little. His divisions of "races" is a bit too arbitrary, even if we view them only, as we have said, as "existent types." Thus his map of Spain shows the larger part to be constituted of his "Ibero-insular" race; that is to say, brunette, dolichocephalic, and undersized in stature. But his map shows also a number of regions in Spain where an entirely distinct one of his six main "races"—his "Atlanto-Mediterranean"—is indicated. Where is the division line drawn between "Ibero-insular" and "Atlanto-Mediterranean"? Judging by the tints of the map they are as different as their names. But compare this with Oloriz' map of the distribution of stature in Spain.[1] At once it appears that all provinces whose average stature falls below 1·65 are dubbed "Ibero-insular," classed, that is, with Sardinia, Corsica and Calabria; while all regions, quite the same in head form and pigmentation, characterized by a stature above this arbitrary line, become at once "Atlanto-Mediterranean." The continuity of type of the tallish population of Catalonia, along the east coast, is rudely interrupted in this way, as our map shows; and an appearance of disharmony, which not even Deniker himself would acknowledge to exist, is imparted to the map. One has no right to violate geographical probability in this way; a little healthy generalization would not have been amiss. In this connection, however, it should be said that our author has done well to emphasize elsewhere the radical difference in stature between these two varieties of what we have termed the Mediterranean "race." It is not easy to explain why the Corsican, Sardinian and Spaniard should be so many centimetres shorter than the Berber, when they all resemble one another so closely in other respects. Nevertheless, we find agreement among all the best authorities in affirming a substantial unity of origin of the two. Whether the divergence of stature be due, as we hold, to a degeneration attendant upon a too protracted civilization in Europe, to the evil effects of a long-continued survival of the unfittest through military selection, or to the depressing influences of malaria, and an unfavourable environment in Corsica, Spain and Southern Italy, no man can say with surety. We admit the fact of differences of stature, then; but we object to drawing the line at precisely 1·65 metres, and we believe the inclusion of both groups in a single all-embracing Mediterranean or Iberian "race" to be justified by the facts.[2]

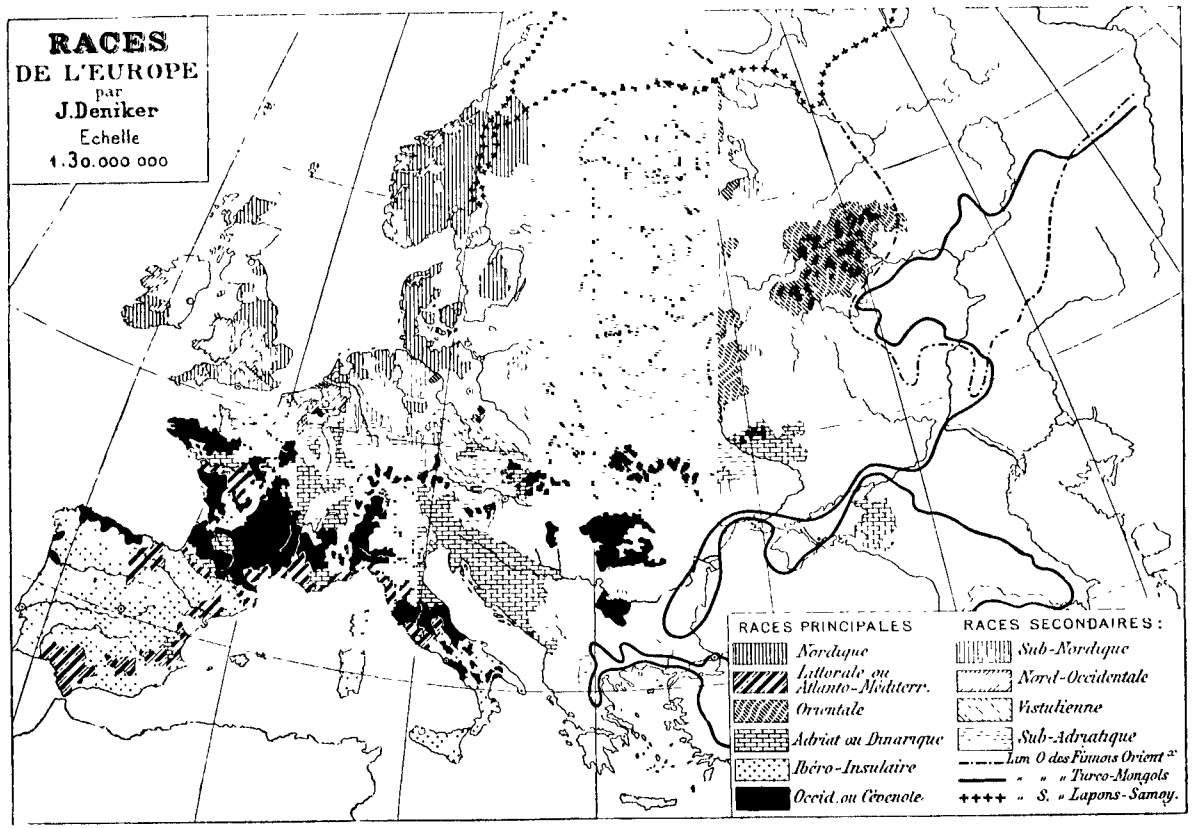
In eliminating all efficient factors save heredity, and in keeping an eye upon geographical probabilities, we have taken two of our three steps toward the scientific constitution of real "races" from Deniker's "existing varieties" of man. Now for the last. A "race" has been defined as an "hereditary type." Has our author

[1] "La talla humana en España," Madrid, 1896.

[2] A more logical division, if one is to be made, seems to be Collignon's. He distinguishes the Cro-Magnon and Iberian types, relying therefor upon cranial differences and not those of stature alone, which latter are so open to the modifying influences of environment. (*Les sciences biologiques, à la fin du xix siècle*, 1893, p. 300.)

neglected this factor of heredity? Or has he merely hit upon transitory compounds of human traits? He is too keen for that. Fortunately, also, men considered in the mass are never fickle in this respect. They betray a marked persistency, even in their minor combinations. But it seems to us, nevertheless, that Deniker might have simplified his scheme by going back, even of his *immediately* hereditary combinations, to the consideration of at least penultimate derivation. We may rid ourselves of troublesome compounds of traits oftentimes in this way. Thus in Alsace-Lorraine there certainly is a peculiar persistence of a very tall, blondish, but anomalously broad-headed population. This is so marked that Dr. Collignon, prime authority upon the region, dubs it, with reservations, a Lothringian sub-race. Heredity is at work, for we know that this type has lasted in this locality for a number of generations at least, with some approach to constancy. But the consistent evolutionist must go behind this evidence. He must somewhere find an origin for this combination. It is not enough to affirm that it exists to-day. That is merely to dodge the issue of descent entirely. To stop here is to imitate Agassiz and the early systematists. We must cast about for affinities. Here we touch, as it seems to us, the tap root of Deniker's evil. The eye has been blurred by the vision of anthropometric divergencies, so that it has failed to note similarities. Wherein, for example, does this peculiar type of Alsace-Lorraine touch the neighbouring ones? Do not query yet as to the amount of its difference from its neighbours. Does it not in its tallness of stature show a distinct affinity with the "Nordic" or Teutonic type? Forget for the moment that it differs from it in head form and less so in pigmentation. Turn, on the other hand, toward central Europe; there you find a distinct *point d'appui* in the broad heads and grey eyes of the Alpine peoples. Collignon finds an explanation for the Lothringian type in a cross of this kind between two primary races. One confers its stature more largely than other characteristics; it betrays a distinct persistency in this respect. The other primal element has endowed the cross with its peculiarities of head form. Unless, in this way, we turn the pages of the book backward, we are speedily confronted with the endless varieties of the mere systematist. The broader our range of observation, the less do we clearly see. This, then, is perhaps the real fault of our author in his magnificent contribution. He certainly gives us one of the most complete pictures which we yet possess of the present anthropologic composition of Europe; but he leaves us more in the dark than ever as to the primary relation of the various parts to each other. Of course, if one be willing to accept the views of certain authorities as to the absolute immutability of certain morphological types, this scheme of Deniker's needs no further simplification. Those, however, it seems to us, are at variance with the whole evolutionary hypothesis.

Analyze our author's scheme in the way we have indicated, and we may, it seems to us, greatly simplify his elaborate classification. Even in the course of this hasty criticism we have incidentally stated what seem to us to be sufficient reasons for merging his "Vistulan" race in the "Oriental"; and for combining his "Ibero-Insular" and his "Atlanto-Mediterranean" into one. This reduces the number of his races to eight. Combine his Nordic and sub-Nordic, his Adriatic and sub-Adriatic, and we come quite near the three, or, as we have said, more probably three and one-half races, whose existence is acknowledged by the great majority of the best authorities to-day. It is comparatively simple to dispose of the rest in like fashion, especially in the light of recent archæological research; to discover such intimate relationships as to quiet our minds as to their primary derivation from the common sources. Only one great, insurmountable obstacle stands in the way of the ardent



MAP OF EUROPE, SHOWING DISTRIBUTION OF RACES.

BY DR. J. DENIKER, PARIS.

evolutionist who would finally run even the three primary types to earth in the far distant past. How shall we ever reconcile the polar difference in every respect between the broad-headed Asiatic type of central Europe and its two dolichocephalic neighbours on the north and south. Suppose, as we have done,[1] that even these last two finally are traceable to a common African source, are we to confess the existence of two distinct and primary forms of the *genus Homo*—one Asiatic and one African? are we to deny, in other words, the fundamental unity of the human species? We are entering upon the field of speculation pure and simple. Only by the establishment of a broad and secure base of intellectual supplies in the detailed analysis of the present living populations can we hope to assure the safety of such expeditions into the remote past. We need, first of all, a complete knowledge of the living populations of the earth, with all their variations. Deniker has afforded this more thoroughly perhaps than any anthropologist heretofore for Europe. He has certainly cleared the way for all future investigators. To him all scientists should be duly grateful for this service.

Boston, Mass., U.S.A. WILLIAM Z. RIPLEY.

Explanation of Plate XV.

Map of Europe, by Dr. J. Deniker, showing the distribution of Races and Sub-races according to the author's scheme of classification. Reproduced by kind permission of the author.

EXCAVATIONS IN CRANBORNE CHASE, NEAR RUSHMORE, 1893–96. By Lieut.-Gen. Pitt-Rivers, D.C.L., F.R.S., &c., Vol. IV. (Printed Privately, 1898.)

This magnificent volume forms a worthy companion to the three preceding instalments of General Pitt-Rivers's great work, descriptive of the researches which he has so successfully carried on for many years in Cranborne Chase, on the borders of Dorset and Wilts. By way of Preface, the author has re-produced, in an amplified and illustrated form, the admirable Address which he delivered last year as President of the Local Meeting of the Royal Archæological Institute, on the occasion of its visit to Dorchester.

Whilst the previous volumes of General Pitt-Rivers's work related to excavations in villages of the Roman period and in tumuli of the Bronze Age, the present volume deals chiefly with the examination of certain enclosed entrenchments, or so-called camps, of the Bronze Age, and with the opening of a Long Barrow, believed to be of Neolithic Age. Four square-shaped camps were fully investigated; and the explorer, with characteristic thoroughness, dug each camp completely over—the ditch, the rampart and the internal space being alike excavated.

The first entrenchment here described is known as "South Lodge Camp." The ditch, though more than six feet deep, was completely silted up, whilst the rampart had been lowered by denudation, so that the relief of the entrenchment was very slight. Among the objects found at the bottom of the ditch were a so-called bronze razor, a bronze awl, and an urn of the Bronze Age: then, a little higher up, were discovered another razor, a bracelet and a bundle of wire, all of bronze; whilst, quite near the top of the silting and immediately adjacent to deposits of Roman date, was a bronze looped spear-head, of late Bronze Age. In the rampart nothing but relics of the Bronze period were found.

[1] "The Racial Geography of Europe"; xii, "The Aryan Question" (*Popular Science Monthly*, lii, 1898, pp. 304–322).

The second camp described in this volume is a small rectangular entrenchment on Handley Hill. The relief was very low, but the form of the camp was more regular than that of the others. The exploration yielded pottery of the Bronze Age, with a little pottery of the Roman period at the top.

The furrow called the "Angle Ditch," on Handley Down, is supposed to have marked one corner of a rectangular enclosure. The ditch was filled with chalk-rubble below, mixed silting above, and mould on the top. At the bottom were discovered fragments of a bronze palstave and a bronze razor, a British urn and a sandstone-rubber; whilst higher up was a polished stone-hammer. These objects may be referred to the Bronze Age, whilst the surface-mould contained relics of Roman and Romano-British pottery.

"Martin Down Camp" is a large rectangular enclosure, which was probably formed chiefly for pounding cattle, though doubtless used also for defence. Its position in a slight hollow suggests that the site was selected for sake of shelter, and perhaps for the vicinity of water. In the ditch were found a bronze awl and part of a bronze razor, with fragments of pottery of the Bronze period.

These investigations show that the district was inhabited during the Bronze Age, by a pastoral people, who lived in enclosures of squarish shape. The entrenchments were probably made, to a large extent, to keep off wolves and other wild animals. It is interesting to note that General Pitt-Rivers has found a large number of flint flakes in the Roman deposits which occur in the superficial part of the ditches; the number here far exceeding that of the similar relics in the lower deposits of the Bronze Age, whence it may be inferred that the Romans were more accustomed to use flints than were the earlier bronze-using people. As the author remarks, the mere discovery of flint flakes on the surface in fields is by no means certain evidence of these being relics of the Stone Age.

A Long Barrow, called "Wor Barrow," on Handley Down, was explored in an exhaustive manner, the whole of the body of the tumulus having been removed, and subsequently restored. On the original underlying surface was a trench, cut in the chalk and enclosing an oblong area. The trench showed marks of stakes and contained large flints, probably for wedging down the stakes. The author regards this as a "wooden version of the long chambers of stone found in barrows of the same kind, in places where stone was more plentiful." Within the enclosure six human skeletons were found, huddled together, beneath a small mound of mould. Three of these were in a crouched position, but the other three had been buried in a fragmentary state, the long bones having been laid by the side of the skulls. As no relics were found with the skeletons, the age of the barrow is inferred, to a great extent, from the bones. The skulls belonged to a very long-headed people; whilst the limb bones, with one exception, show that the people were of small stature. General Pitt-Rivers describes his craniometer, and illustrates its use by profiles of skulls and of living heads. In addition to the primary interments in this barrow, there were secondary interments, probably of Roman Age, both in the barrow and in the surrounding ditch. The ditch yielded relics of the Neolithic, Bronze and Roman periods. The author suggests that the top of the barrow may have been used as a place of execution in Roman times.

General Pitt-Rivers's volume, in which these explorations are exhaustively described, contains a large number of relic-tables, classified lists of pottery, craniometrical tables and other valuable details, in addition to 84 quarto plates. These plates include lithographs of the relics, reproductions of photographs and contoured plans, with sections of the barrows, and of the ramparts and ditches of the camps, into which all the relics, including every fragment of pottery, have been projected. The whole

investigation is a model of archæological research, conducted on modern scientific principles.

By the generosity of General Pitt-Rivers a copy of this splendid work has been presented to the Library for the use of the Fellows of the Institute.

F. W. R.

ESSAYS ON MUSEUMS AND OTHER SUBJECTS CONNECTED WITH NATURAL HISTORY. By Sir William Henry Flower, K.C.B., D.C.L., D.Sc., LL D., Ph.D., F.R.S, etc. London, Macmillan and Co., Limited, 1898.

During an enforced period of restraint from active duty, owing unfortunately to ill-health, Sir William Flower has occupied himself in collecting together in book form such of his various essays and addresses as he considered suitable for re-publication. In thus placing in a more accessible and permanent form than the scattered journals in which they could hitherto only be found, Sir William Flower has rendered signal service to workers in those biological sciences which he has made his lifelong study, and in other ways done so much to promote and expone, notably in connection with museums.

The work is divided into four sections. In the first are placed essays and addresses connected with the practical work of the author's life, namely, the advancement of scientific knowledge through the development of museums. Of these the foremost place is given to Sir William's Presidential Address to the British Association for the Advancement of Science, delivered at the Newcastle-on-Tyne Meeting in 1889. This is followed by others on Modern Museums, Local Museums, School Museums, Boys' Museums, the Booth Museum, and lastly, the Museum of the Royal College of Surgeons of England.

The second section of the book is devoted to subjects on general Biology, and begins with the author's introductory lecture to the course of Comparative Anatomy, delivered at the Royal College of Surgeons of England in 1870, and is followed by a paper read at the Church Congress in 1883 on "Recent Advances in Natural Science in relation to the Christian Faith," two lectures on Whales, an order of vertebrates to which Sir William is well-known to have given special attention; the other addresses deal with the subjects of Evolution, Mammalia, and the Zoological Society of which he is President. The fifth and last section consists of Biographical Sketches of Rolleston, Owen, Huxley, and Darwin.

There remains to be noted the fourth section, and this is the portion of the work which specially appeals to readers of this *Journal*, namely, Addresses on Anthropology. The pages of our *Journal* fortunately contain many contributions on this subject from the pen of Sir William Flower, which will ever rank as classical landmarks in the history of our science in England, as well as two Presidential Addresses. Of the latter one is reprinted in the work before us,—that delivered at the Anniversary Meeting in 1885, at the end of the second year of his Presidency. In it are defined the characteristics and subdivisions of the three principal types of Man, namely :— 1. The Ethiopian, Negroid, Melanesian, or Black. 2. Mongolian, Xanthous, or Yellow. 3. Caucasian or White, and the position of the American and Australian races is discussed. Another essay which may likewise be classed in the same category as the former, since it consists of a summing up of knowledge, is that on the "Pygmy Races of Man," delivered at the Royal Institution in 1888. This contains an account of our actual knowledge at the time it was delivered of the smallest races of men either existing, or, as far as we know, ever having existed on earth, which

may, taking the word in its current, though not in its literal sense, be called the pygmies of the species. A third essay is that on "Fashion in Deformity," as illustrated in the customs of barbarous and civilised races, the substance of which was also delivered as a lecture at the Royal Institution in 1880, but was subsequently published in an amplified form as a separate work by Macmillan and Co. in 1881.

It is well-known that not the least service Sir William Flower has rendered to anthropology has been his constant advocacy of its wider and more systematic study in this country. In his Preface he says, "In putting forward its claims for greater recognition I felt for a long time as one crying in the wilderness. I am glad, therefore, to have the opportunity of bringing much of what has been said in some of these addresses once more before the notice of those who may have opportunities of forwarding the work, and also acknowledging various recent signs of progress, amongst which may be mentioned the establishment of a Professorship of this subject by the University of Oxford."

Such being the author's sentiments, the first two essays of this part of the work before us are appropriately his addresses as President of the Department and subsequently of the Section of Anthropology at the British Association meetings in 1881 at York, and in 1894 at Oxford. In each of these are set forth in a very lucid, earnest, and powerful manner, as a perusal of them clearly shows from the strong convictions of the writer, not only the scope and objects of the science, but also its practical importance, especially to ourselves as a nation and to our statesmen, since under the British Empire is included examples of almost every diversity under which the human body and mind can manifest itself.

As bearing upon this point, let us quote the following passage from the address at Oxford:—

"The physical characteristics of race so strongly marked in many cases are probably always associated with equally or more diverse characteristics of temper and intellect. In fact, even where the physical divergencies are weakly shown as in different races which contribute to make up the home portion of the Empire, the mental and moral characteristics are still most strongly marked. As the wise physician will not only study the particular kind of disease under which his patient is suffering before administering the approved remedies for such disease, but will also take into careful account the peculiar idiosyncrasy and inherited tendencies of the individual which so greatly modify both the course of the disease and the action of remedies, so it is absolutely necessary for the statesman who would govern successfully, not to look upon human nature in the abstract and endeavour to apply universal rules, but to consider the special moral, intellectual and social capabilities, wants, and aspirations of each particular race with which he has to deal. A form of government under which one race would live happily and prosperously may to another be the cause of unendurable misery. All these questions then should be carefully studied by those who have any share in the government of people belonging to races alien to themselves. A knowledge of their special characters and relations to one another has a more practical object than the mere satisfaction of scientific curiosity; it is a knowledge upon which the happiness and prosperity or the reverse of millions of our fellow subjects may depend. The ignorance often shown on these subjects, even in so select an assembly as the House of Commons, would be ludicrous if it were not liable to lead to disastrous results."

In reading the speeches recently delivered by three distinguished men appointed to high positions of authority, one could not help being struck by the almost entire absence of this aspect of the work of government, and it is interesting to compare with

the passage just quoted from Sir Wm. Flower's address, the following words uttered on the subject by one of the speakers, "Secondly, the * * * * should try to remember that those people are not the sons of our race, religion, or clime, and that it is only by regard for their feelings, by respect for their prejudices, almost by deference to their scruples, that we can obtain the acquiescence as well as the submission of the governed."[1] To the first clause no exception will probably be taken, but surely regard for feelings, respect for prejudices, and deference to scruples form but a fractional part of the means by which the end desired is to be attained, and the statesman who relies upon such considerations only is very likely to fail unless his legislation is based upon the other factors contended for by Sir Wm. Flower, namely, a thorough knowledge of the manners, customs, mode of thought, and mental condition of the people who have to be governed.

Though the writer of this notice has had the good fortune to have heard many of these essays delivered by the author, he has read the work through with the greatest pleasure and interest, and feels confident that anyone who does the same, whether he be an anthropologist or not, will appreciate it thoroughly, and gain a fuller and better knowledge of the sciences which it has been the life-object of Sir William Flower to promote.

J. G. G.

THE ETHNOLOGY OF FUNAFUTI [Ellice Group]. By Charles Hedley (from *Memoirs of the Australian Museum*, Vol. III, Part IV).

This valuable contribution to our knowledge of the Pacific Islanders is one of the results of the expedition sent out under the auspices of the English Royal Society to investigate the formation of the coral reefs in the Pacific. This expedition unfortunately came to an unsuccessful end. A second was undertaken, subsidized by the Government of New South Wales, aided by a private individual. This second venture was under the leadership of Professor David of Sydney University, a man whose training and acquirements eminently fitted him for such a post.

Mr. Hedley's observations were made during the first named of these expeditions, and it is for this reason perhaps scarcely accurate to say that failure was the result, and it is but right to express to Mr. Hedley the gratitude of ethnologists for this important contribution which he, a conchologist, has made to the science of Ethnology. In a short paper of seventy pages he has compressed a vast quantity of information of the highest value with regard to this island, of which little is to be found in English journals. After a short introduction, containing the author's conclusions and a general statement, the paper is divided, somewhat in the manner of *Anthropological Notes and Queries*, into sections according to the various crafts dealt with. The paper consists mainly of detailed descriptions, with in most cases good illustrations, by the author, of the various articles worn or used by the islanders. Both descriptions and drawings will render it possible for any comparative ethnologist to deal with the productions of Funafuti as well as if he had the specimens before him. It is perhaps to be expected that a student somewhat unfamiliar with the subject should, on the one hand, seek for distant resemblances; while, on the other, he has overlooked some that are near at hand. Mr. Hedley sees in the natives of Funafuti, or rather of Polynesia generally, a certain likeness in several ways to the Japanese. In some of these, such as "their graceful courtesy in

[1] *Morning Post* of October 29th, 1898.

peace and fierceness in war, the status and freedom of their women, the position and authority of their chiefs, the existence of a Court language, their dexterity and daring in navigation and deep-sea fishing, and their skill in tattooing and in manufacturing bark cloth or paper," it is quite possible that they resemble the Japanese, but it is equally true that in most of them they resemble fully as much races far distant with whom no one would connect them. It would have been much more reasonable on many of these and other grounds to have connected them with the Malay Peninsula, in spite of Professor Keane's dictum that no organic Malay type exists. Even granting this to be the case, there is no question that certain arts practised in the Malay Peninsula and islands find their counterparts in the implements figured by Mr. Hedley. It will suffice to cite the cocoanut scraper [fig. 26], the rotatory adze [fig. 19], or the box and lid connected with the string on page 296 as unquestionable examples which have their analogues in Malaisia. By connecting the subject of his study with the Malays Mr. Hedley would have brought it to a more or less definite result, leaving to others the ethnic affinities of the Malays. His plea for the investigation of the smaller matters in Ethnology will be echoed by all who have worked at the subject. The Anthropological Institute has been in this respect a pioneer; for if all papers such as Mr. Hedley's were written on the lines laid down in *Anthropological Notes and Queries*, a great advance would be made. The strictures of Mr. Hedley on the very useful Ethnological Album of our fellow Mr. Edge-Partington find a somewhat amusing commentary in the fact that the references to this work in his paper number between forty and fifty.

C. H. R.

THE SMITHSONIAN INSTITUTION 1846–1896. Edited by George Brown Goode. (City of Washington, 1897.)

This large volume of 866 pages is the history of the first half century of the existence of the Smithsonian Institution. The short preface to it is by the President of the United States, who remarks that an Englishman, James Smithson, as though influenced by the words of Washington, who in his farewell address strongly urged the promotion of institutions for the diffusion of knowledge, bequeathed the whole of his property to the United States of America, "to found at Washington an establishment for the increase and diffusion of knowledge among men." The Act of Congress establishing the Smithsonian Institution was signed by President Polk on August 10th, 1846.

The first chapter consists of a biographical sketch of the founder, who died at Genoa in 1829. The income from his estate was then enjoyed by his nephew, who died in 1835, in which year the United States became aware of the Smithsonian bequest, which was first publicly announced by President Jackson in a message to Congress on December 17th, 1835. It is strange to note that while Senators Calhoun and Preston of South Carolina were opposed to its acceptance as opponents of centralisation, and because it would be beneath the dignity of the nation to receive benefits from a foreigner, Senator Jefferson Davis of Mississippi and Senator Leigh of Virginia "took strong ground on the other side, and their counsel finally prevailed after the report had lain upon the table for several months."

On May 9th, 1838, a decree of the English Court of Chancery was obtained giving the Smithsonian bequest to the United States. But eight years passed before any definite plan was fixed upon, "although at each session of Congress the President urged prompt action." At last the Smithsonian Institution began to exist as a large and important building at Washington having attached to it an observatory, a museum

a botanic and zoological garden, and the necessary apparatus for illustrating every branch of physical science. Some account is given in this volume of various men of more or less eminence who have been concerned in the government of the Institution, and especially of its three secretaries: and chapters are devoted to an account of the growth of its library and museum. As regards the latter, the collections which had been formed by the National Institute between 1841 and 1861 were, on its dissolution in the last-named year, deposited in the Smithsonian Institution. In 1890 a National Zoological Park was formed in the neighbourhood of Washington and placed under the direction of the Regents of the Smithsonian Institution.

It is of course unnecessary here to say anything about the work done by the Institution in Astronomy, Physics, and most other branches of Natural Science. As regards Anthropology, it happened that the first scientific memoir submitted to the Institution for publication, and published by it, was the work of Squier and Davis on the *Ancient Monumen's of the Mississippi Valley*. A chapter is devoted to an account of the origin and development of the Bureau of American Ethnology, and its connection with the Smithsonian Institution, under whose direction it now remains. The collection of objects of anthropological interest in the museum of the Institution is mentioned as "enormous." In short, the following paragraph (p. 770) sums up the work of the Institution, more especially in its connection with Anthropology:

"As a national institution, there is but one ideal possible for the Smithsonian Institution, and that the highest, the leading scientific centre of the intellectual life of a great nation. In American anthropology it should stand, as it has stood, without a rival in this field; not one of several institutions fostering American science, but the leader, appealing to scholars through the most profound researches, and to the public and students through the most carefully-arranged museum in the country."

The book is adorned by excellent portraits of the three secretaries, Joseph Henry, Spencern Fullerton Baird, and Professor Samuel Pierpont Langley, who have successively served the Institution since its foundation, and the last-mentioned of whom is still living. There are also likenesses of the Founder, of some of the members of the Board of Regents, and of other persons of eminence who have been specially interested in the working and development of the Smithsonian Institution.

T. V. H.

Tom Tit Tot, an Essay on Savage Philosophy in Folk-Tale. By Edward Clodd. Duckworth & Co., 1898, 5*s*. net.

The folk-tale which forms the nucleus of this volume is one of a group united by a common *motif* of which variants are found in many countries, and called by various names. Tom Tit Tot is a Suffolk variant of the story which is probably best known as "Rumpelstiltskin," from the German version in Grimm's collection, the Welsh name of the fairy being "Tratyn-Tratyn," the Irish "Trit a Trot," and the Scottish "Whuppity Stoorie." Mr. Clodd notes the existence of many other variants of this story, and the difficulty, perhaps the impossibility, of determining in what quarter widely diffused folk-tales have originated. On comparing Tom Tit Tot with the other above-mentioned British variants, we find that whereas in Scotland, Ireland and Wales, the magical helper is a fairy, in Suffolk "a small little black thing with a long tail" assists the distressed spinner, and insists, in return, on the guessing of its name. The author then comments on the incidental features of the stories, pointing out how much light is thrown on them by the habits, customs and beliefs of primitive people in all parts of the world. A belief in magic everywhere rules the

life of the savage, and, absurd as its precepts may seem to us, they nevertheless form a consistent whole. Primitive man has everywhere looked at nature and life in the same general way, and it is only by realising his point of view that we become capable of seeing that the incidents in folk stories express the ordinary beliefs of the time at which they originated, and are not the efforts at romance of some primitive Munchausen. Wanting this clue, civilized man now, like Plutarch in the past, sees nothing in the beliefs and customs of his remote ancestors but meaningless absurdities. Mr. Clodd points out with much wealth of illustration how the incidents in Tom Tit Tot harmonise with the primitive beliefs in magic still to be found in our own and other countries. Indeed, he may be thought to have gone beyond what was strictly necessary for that purpose. But this is hardly to be regretted, for in this little book of 249 pages we have practically, from the pen of a past president of the Folk-Lore Society, a most useful and agreeable introduction to the subject of Folk-Lore.

T. V. H.

Les Vieux Chants Populaires Scandinaves (Gamle Nordiske Folkviser), Étude de Litterature Comparée. Par Léon Pineau. I. Époque Sauvage. Les Chants de Magie. Paris: Émile Bouillon, 1898.

Two reasons, M. Pineau tells us in his preface, have prompted him to undertake this work, namely, the ardent desire to make known in France one of the fairest pages of Northern poetry, and the secret hope of thus contributing to make French national folk-poetry appreciated in France as it deserves. The Scandinavian ballads, which form his subject, have been collected during the last three centuries, or a little more, if we reckon from the publication by Vedel in 1591 of the first hundred Danish heroic ballads. All the Scandinavian nations have contributed to the production of this great body of folk-song—first, Denmark, then Sweden and the Faeroe Islands, and (since the middle of the present century) Norway and Iceland. Various theories on the origin of the ballads have been broached; as to their age critics are still more divided. Grimm dates them from the beginning of the twelfth century. Others bring them down even to the fourteenth and fifteenth centuries. The influences supposed to be detected in form or subject have played a great part in the decision of the date: and Rosenberg, who decides for the twelfth century, attributes the inspiration of the ballads to the contact between the Scandinavian and Celtic races during the Viking expeditions.

What is certain about the ballads is that they were found among "the folk." M. Pineau, therefore, studies them as folk-lore. He draws a picture of an early state of culture, which he identifies with savagery, a state in which no hard and fast line of demarcation is believed to exist between man and animal; in which totemism is universal (though anthropologists, we may observe, are by no means agreed upon this); in which the idea of the soul has arisen as the double, the other self, capable of being detached from the body, of passing from body to body, though somehow dependent for its manifestation, if not for its existence, on having a body of some kind ready for it: in which the cult of the dead has arisen, and primitive animism has given way to the personification of nature. He calls attention to the fact that material remains throughout Europe, and in particular in Scandinavian lands, have disclosed the former existence in these countries of savages, who, he argues, must have left not only material relics, but also traces of their intellectual culture. He points to the beliefs, usages and stories still existing among the peasantry as traditions going back to the age of savagery, and contends that the ballads are equally to be ascribed

to that period. A literature is the expression of the society that has given it birth; in the species as in the individual nothing is entirely abolished, nothing is lost; the soul of humanity is made of stratified layers; the lower and earlier strata, though covered, are still there; the reactions which they produce make themselves felt on the surface; and they are themselves continually cropping out. The ballads are such out-crops.

From this general statement the author passes to the proof in detail of his position. This he effects by a consideration *seriatim* of the attitude of the ballad-singers toward runes and incantations, metamorphoses, metempsychosis, toward the dead and the nature-spirits, such as giants, trolls, elves and dwarfs. And he shows that this attitude is that of savage man, or at least is directly derived from it. With the substance of all this every anthropological student will be in agreement, though it is possible to differ in regard to many subordinate points. For example, it is quite clear that the belief in magic is characteristic of the lower strata of culture and that runes are believed to be most powerful instruments of magic; but it by no means follows that their invention is to be attributed to populations anterior to the present Scandinavians. For the ascription of magical power to writing is not peculiar to the Scandinavian ballads. Wherever savages have come into contact with civilized races, the former, imbued with the ideas of witchcraft, have found in it a ready means of accounting for everything they could not understand in the proceedings and the methods of the strangers; and among these a foremost place has always been taken by the art of writing. The passage from the *Háva-mál* quoted by M. Pineau (p. 31) is anything but easy of interpretation. Odin, to whom the gift of runes was ascribed by the Norsemen, represents himself as hanging on the gallows-tree for nine nights. During this time he caught up runes (or mysteries, as Vigfusson and Powell translate). Between these words, however, and the statement that he learnt nine songs of might (fimbul-lays) from the son of Balethorn, there is, it seems, a *lacuna*; and the sequel of the poem probably indicates that though Odin learnt magical songs from another, he himself was the author of runes. But even if M. Pineau's interpretation, that it was the son of Balethorn who taught runes to Odin, were correct, it were too large an inference that the Norsemen received them from their predecessors, whether Celts, Finns or Lapps. Everything leads us, on the contrary, to suppose that they were derived from more civilized races, and that the knowledge of them was confined to the higher classes of the people—in other words, to the invaders rather than the subjugated or expelled populations.

In like manner there is room for divergence of opinion as to the answers offered for many of the riddles which the ballads put to us. I have noted quite a number; but none of them are of such importance that they seriously detract from the value of the main argument. M. Pineau has at command all the qualities of lucidity and charm we are wont to associate with French literary exposition. His illustrations are drawn not only from Scandinavian ballads, but also from the popular ballads of his own and other countries. They are apt, and well-chosen; and he has wisely avoided the temptation to overload his pages with them.

From the matter of the ballads he passes to the form, which he contends is not less primitive than the substance. All the characteristics of savage poetry—the repetition of stereotyped phrases; the recurrence of epithets, the abruptness, the short and simple similes invariably drawn directly from nature—are those of the ballads. Above all, the refrain is due to the origin of the ballads in a dance. Poetry is evolved from words uttered to the accompaniment of measured movement. At first these words are nothing but unmeaning syllables. Then two or three words, growing into a phrase,

are repeated again and again; a recitative is gradually developed, and the germ-phrase is repeated in the pauses. From such lowly beginnings the highest verse, lyrical, dramatic and epic, is derived. The ballad with its refrain discloses itself as one of the stages of the development—the recitative accompanied by the continued iteration of the germ-phrase, in which the emotion centres. Undeniably this takes us down into a comparatively early period of barbarism; and in it M. Pineau finds one of his most powerful arguments against the writers for whom the middle ages gave birth to the ballads, and especially against the theory which attributes them to the educated and courtly classes. When he himself approaches their precise origin, he claims to discover it in the contact of the Scandinavian and Celtic races, not at the time of the Viking raids, but at least a thousand years before, when the Teutonic invaders of the North found the land already occupied by the peoples who had raised the megalithic monuments. There is much that is plausible, much that is seductive, in this hypothesis. The Count De Nigra had already pointed to the striking absence of the narrative ballad from Southern Italy, as an evidence that its production in Upper Italy, and throughout the north and west of Europe, was due to the Celtic substratum of the population. At present, however, the state of our knowledge is far from permitting us definitely to affirm it. As regards the peninsula itself of Norway and Sweden, it is doubtful whether the Celts ever reached it. They may have done so; and the round huts common to Sweden and France, the fashion of reckoning by the score common to the Danes and the French peasants, the peculiar head-gear and other details of costume, may be evidence of a common Celtic ancestry. But this is a long way from proving that the efflorescence of ballad poetry is due to the Celts.

Here again, as in previous instances, if I take exception, it is to M. Pineau's incidental and subordinate claims and arguments. His main positions will hardly be challenged by any student, for if there be nothing very new in them, it was at least desirable that the ballad literature of the north should be analysed in a painstaking and methodical manner with a view to exhibiting their fundamentally savage character. M. Pineau has fulfilled this function admirably, and has for ever rendered it impossible to maintain that the source of the ballads is no farther off than the twelfth century A.D., or anywhere in the middle ages. Succeeding volumes will deal with other divisions of the subject, of which the present volume is only a first instalment.

We are informed, since the foregoing was written, that the Académie Française has "crowned" the book. In doing so, the Académie has exhibited nothing more than a just sense of the importance of the theme and the skill and learning with which the distinguished author has treated it.

E. Sidney Hartland.

The Determination of Sex. By Dr. Leopold Schenk, Professor at the Imperial and Royal University, and Director of the Embryological Institute of Vienna. Authorised Translation. London: The Werner Company, 1898. Price 5*s*.

In this work of 173 pages, Prof. Schenk has set forth his theory as to the causes which determine sex. The book opens with a preface of two pages in which nothing is stated to give a clue to its contents. The latter are not even tabulated, there are no headings to the chapters, and there is no index of any kind. This is most unusual in works printed in the English language, whether translations or not, and will certainly not render the work as acceptable to the English readers, who are likely to read it, as it might have been had the usual custom been followed. After the short preface the author at once begins his subject, which he divides into three chapters. The first of these is devoted to a consideration of the various theories

which have been propounded from the time of Hippocrates downwards, on the factors determining sex in the first instance, and is therefore historical in its character. The various views are tersely put and in some instances criticised. The author favours the view of the cross-heredity of sex. This chapter ends with the 95th page, and occupies 88 pages.

The second chapter deals, in the first instance, with the products of excretion, especially those eliminated from the body by the kidneys. Attention is specially directed to the elimination of the carbo-hydrates. Their presence in the urine may be interpreted as an indication that the process of combustion is not being thoroughly carried out, in other words, that metabolism is incomplete. The detection in the urine is therefore a matter of great importance. For this purpose the author relies upon the phenylhydrazin test for sugar as the most delicate in detecting small quantities, but also employs Trommer's, the fermentation and Nylander's tests. Metabolism, he shows, is less complete in the female, and sugar is more often found and in larger quantities normally in her than in the male. Ovulation is not independent of diet and metabolism, and when the latter is incomplete, the ovum is not so highly developed as when it is complete. In a highly developed ovum, he maintains the proto-plasmic elements are favourable to the development of the male sex, while in a less ripe and less well nourished ovum the characteristics and powers inherent in its protoplasm, have not been fully attained, and have in fact only reached the stage at which its cell products can arrange themselves for the development of a female. He argues that when the diet is such as to enable complete metabolism to occur, the maturity of the ovum reaches the highest perfection, and hence most favourable to the evolution of a male individual. What the nature of the diet is to be, to produce this object, must be a matter of careful regulation by the physician and of experiment, as it varies in different individuals, but it must be such as not only to cause a disappearance of the normal sugar urine, but also an increase in the reducing substances. Certain impulses are likewise necessary for the stimulation of the functional development of new cells and new organs. These are brought into effect by the kind of feeding which produces the above-mentioned results, and are accompanied by a high exchange of nitrogenous substances. Such dieting usually produces salutary effects in the health of the mother herself, even though it may not always be possible to carry it out so thoroughly as to obtain complete metabolism.

The third chapter may be said to be occupied with clinical evidence in favour of the author's views, the results of experimental researches and treatment undertaken with the view to the production of male progeny, and lastly it contains valuable directions for observing the influence of diet on the nutrition of the mother, which has, as he has shown, so powerful an influence on the sex of her offspring. The directions for treatment are clear, and will readily be understood by any physician well skilled in the physiology of digestion, who can undertake the necessary analysis of the urine which is absolutely essential, but, as we know from practical experience (having personally repeated the author's tests) not a very difficult matter, though it takes a little time to do. While the author claims to have formulated the influences which determine the production of male progeny and the treatment to be adopted for that end, he states that he has not been able to formulate directions for treatment which will tend to the production of female progeny.

The work has been well thought out and appears to be based on careful observations, so that it is worthy in every way of the attention of the scientific anthropologist as well as of the physician.

J. G. Garson, M.D.

ANTHROPOLOGY AT THE BRITISH ASSOCIATION; Sixty-eighth Meeting: Bristol, 1898.
Report by J. L. Myres, M.A., F.S.A.

The Anthropological Section met under the presidency of Mr. E. W. Brabrook, C.B., F.S.A., ex-President of the Anthropological Institute. His inaugural address dealt with the "Unity of the Anthropological Sciences," and will be found printed in full in the forthcoming Proceedings of the British Association (Bristol, 1898, § H), and in the issue of *Nature* for September 29th, 1898.

Committees were appointed for the current year as follows:—

To organise an Ethnographical Survey of the United Kingdom. *Chairman*—Mr. E. W. Brabrook. *Secretary*—Mr. E. Sidney Hartland. Grant, £25.

To organise an Ethnological Survey of Canada. *Chairman*—Professor D. P. Penhallow. *Secretary*—Dr. George Dawson. £35.

To co-operate with the Committee appointed by the International Congress of Hygiene and Demography in the investigation of the Mental and Physical Condition of Children. *Chairman*—Sir Douglas Galton. *Secretary*—Dr. Francis Warner. £10.

To conduct Explorations with the object of ascertaining the age of Stone Circles. *Chairman*—Dr. J. G. Garson. *Secretary*—Mr. H. Balfour. £20.

To Excavate the Lake Village at Glastonbury. *Chairman*—Dr. R. Munro. *Secretary*—Mr. A. Bulleid. £50.

To co-operate with the Silchester Excavation Fund Committee in their Explorations. *Chairman*—Mr. A. J. Evans. *Secretary*—Mr. John L. Myres. £10.

The Anthropology and Natural History of Torres Straits. *Chairman*—Sir W. Turner. *Secretary*—Professor A. C. Haddon.

To prepare a new edition of "Notes and Queries on Anthropology." *Chairman*—Professor E. B. Tylor. *Secretary*—Dr. J. G. Garson. £50.

To collect, preserve, and systematically register Photographs of Anthropological Interest. *Chairman*—Mr. C. H. Read. *Secretary*—Mr. J. L. Myres.

The Present State of Anthropological Teaching in the United Kingdom and elsewhere. *Chairman*—Professor E. B. Tylor. *Secretary*—Mr. H. Ling Roth.

Resolutions were submitted to the Council as follows:—

That having regard to the letter of December 15 last, from Sir E. Maunde Thompson, printed in the Report of the Council, the desirability of requesting the Council of the Association to take further action with regard to a Bureau of Ethnology, by renewing the correspondence with the Trustees of the British Museum, be referred to the Committee of Recommendations.

That the Council be requested to urge strongly on the Indian Government the desirability, in the interests both of administration and of science, to promote an inquiry, under the direction of skilled anthropologists, into the physical and mental characteristics of the various races throughout the Empire, including their institutions, customs, and traditions, and a carefully organised photographic survey.

That the Council be recommended to issue the collected Reports on the North-Western Tribes of Canada in a single volume at a moderate price, reprinting so many of the Reports as may be necessary.

In the summary account which follows, the papers read at the Bristol Meeting are arranged for convenience of reference according to their subjects, and are followed by a brief abstract of points raised in discussion at the time, and by references to actual or probable publications *in extenso*.

PHYSICAL ANTHROPOLOGY.

The Mediæval Population of Bristol. By J. Beddoe, M.D., F.R.S.

The material of this paper is derived from the skulls found below and around the church of St. Werburgh, which was demolished about twenty years ago, and from various mediæval lists of surnames. The mediæval skulls are mostly small and roundish, with a cranial index of 80, while that of more modern skulls was 76·6. The characteristics of these skulls are ascribed to the large proportion of French blood which at that time entered into the population.

Mental and Physical Deviations from the Normal among Children in Public Elementary and other Schools. Sixth Report of the B. A. Committee.

The research is based on recorded observations of the 1,120 children who appeared to require special care and training, a catalogue of whom was given in the last report (1897)—viz., 597 boys, 523 girls.

Some account of these children is given in the Annual Report (1898) of the Childhood Society, which has allowed access to the records of those cases.

The new information is mostly obtained by studying the relative frequency with which the main classes of defect are associated in boys and girls respectively, and the facts tabulated show that great difficulties must arise in making any provision for the proper care of those children, who are altogether below the normal or average in bodily and mental power. The large proportion of both boys and girls who present "abnormal nerve-signs" or irregularities in movement, balance, and response in action, shows the importance of trying to remove each such sign of brain-disorderliness in detail by carefully adapted physical training.

The improvement therefore of the brain condition of children below the average in mental and physical development requires much labour on the part of skilled teachers, combined with good hygienic surroundings, and such work must necessarily not be estimated by average results.

[Printed in full in *Proc. Brit. Ass.* 1898 (Bristol). *Cf.* previous annual reports.]

On the Human Ear as a means of Identification. By Miss M. A. Ellis.

For purposes of identification the helix is marked off into five natural divisions, though seldom more than two or three of these are seen distinctly in the same ear. Ears do not change shape after childhood. The right and left of each pair of ears usually vary in shape, and the most distinctive features are usually found in the upper half of the left and the lower half of the right ear.

Human Life at High Altitudes. By O. H. Howarth.

The observations extend over the western ranges of America and parts of Europe and North Africa; and deal with the effects upon the human body of life in high altitudes, particularly the immunity from diseases of the respiratory organs, diphtheria and phthisis being absolutely unknown at an altitude of 6,000 feet, and up to this altitude occurring with diminishing vigour. On the other hand, certain diseases appear to be due to living in high altitudes, especially mountain leprosy and certain changes upon the nervous system, and brain effects which developed in those who had been born and who had resided for a long period in high altitudes. The prevalence of idiocy and slowness and depression of the senses may be the direct result either of low atmospheric pressure or of solitude, and these brain effects become hereditary. Among the causes which lead people to go to high altitudes, the religious motive could not be overlooked, in America especially.

Dr. Beddoe, on this paper, pointed out that Thibet, which has the highest average altitude in the world, is the only place in which real theocracy existed, and that the shepherds in remote parts of Australia often became demented through solitude.

Dr. Francis Galton thought much useful knowledge could be thrown upon the subject by observing the behaviour of animals in high altitudes.

A stone object from a high altitude in America, exhibited by Mr. Howarth as an artefact, was pronounced by Mr. C. H. Read to be of purely natural formation.

FOLK-LORE AND COMPARATIVE MYTHOLOGY.

On the Folk-lore of Guernsey. By the late Mrs. Murray Aynsley.

Illustrations of the prevalent belief in witchcraft, demoniacal possession, and exorcism: and a local legend of St. George and St. Patrick.

On the Folk-lore of the Outer Hebrides. By Miss A. Goodrich-Freer.

Contact with modern civilisation and the consequent decay of native industries and modes of life are proving here, as elsewhere, fatal to folk-lore; and even the very language in which it is recorded is despised by the rising generation.

In the old days every act of life seems to have had its associated tradition, or song, or story. Winter evenings the time was passed in weaving heather ropes or making nets. The stories were told by recognised *scalds*, or ballad-makers: some are of great length, and local variants of "Cinderella," "The Sleeping Beauty," etc., have been noted. Many of the songs have their special tunes, some of which the author has secured. The ancient hymns, apocryphal stories, prayers, catechisms, and legends of St. Columba and his followers, of St. Patrick and of St. Bridget, and the odd mixture of Paganism and Christianity in charms, spells, and divinations are of peculiar interest, and are becoming every day more difficult to recover.

Myths and Fancies of Insect Life. By L. Clement Southam.

Illustrates the traditions and cults attaching to bees as messengers of the gods, spiders in folk-lore and folk-medicine, ants, crickets, ladybirds and beetles.

Some Roman Symbolic Hands. By F. T. Elworthy.

Describes eighteen examples (references in *Proc. Brit. Ass.*, 1898), and contends that these hands are not votive offerings, but represent the Roman Penates.

This conclusion was criticised by Mr. Hartland and Mr. A. J. Evans, who pointed out their closer connection with late imported Oriental than with early indigenous Italian cults. Mr. Myres quoted four other examples in the British Museum, one of which bears an undoubted Greek votive inscription. The Bishop of Clifton commented upon the Christian adoption of the pre-Christian benedictory gesture.

Note on the Origin of Stone-worship. By Professor H. A. Miers, M.A., F.R.S.

When meteorites fell in early times—and there is no reason to believe that they fell any less frequently than now—they must have provoked religious awe. Several instances are quoted among recorded falls in which this was certainly the case, and some in which the meteorite became an object of worship: so that the possibility of such an origin of stone-worship should be kept in view.

[*Cf. Science Progress*, VII., 8. July, 1898.]

Mr. Arthur Evans remarked that formerly, perhaps, too much stress had been laid on the meteoric character of certain sacred stones as an explanation of all primitive stone-worship. As a matter of fact, the worship of sacred stones was far more general, and in the vast majority of cases they were non-meteoric. Stone-worship was, in its origin, rather a kind of "specialised animism." Some accidental circumstance suggested the idea to a savage that a stone was possessed by a particular spirit. But the developed cult of such "bethels" or "baetylia," as found for instance in ancient

Syria, was certainly influenced by ideas attaching to meteoric stones. Thus many of them were said to have flown through the air or to have luminous qualities like the *Ambrosiae petrae* at Tyre, though these do not themselves appear to have been meteorolites.

The Myths and Customs of the Musquakie Indians. By Miss Mary A. Owen.

The author discusses the alleged origin and migrations of the Musquakies; the organisation of their clans and families; their courtship and marriage; ideas of ownership, secret societies, magic, etc.

On Tabu in Japan in Ancient, Mediæval, and Modern Times. By K. Minakata.

Describes the *tabu* observances of Japan in three successive periods.

In the first, from the earliest times to 710 A.D., an indigenous and elaborate system of *tabu* prevailed respecting the person and name of the Emperor, the nobles, priests, temples, certain trees and animals, and unclean objects. The system was extended to the nether land of darkness, wherein this world's vegetation was *tabu* to those souls who would partake of food cooked on an infernal hearth.

In the second period from 710 A.D. to the Restoration of 1867 A.D., this indigenous systm was largely overlaid eand, on the whole, relaxed by beliefs introduced together with the Chinese and Indian culture. Numerous fresh restrictions, together with the Buddhist theory of universal metempsychosis, came into vogue.

In the third period, from 1867 A.D. onward, this heterogeneous and complicated *tabu* system was officially abolished; but a number of primitive and Shintoist *tabus* were at the same time restored, to the death of close relatives.

The author ascribes in great part to the *tabu* system the loyalty, probity, and courtesy of the Japanese, and their close observance of the forms of natural objects and historic scenes evinced by their art and literature.

ETHNOGRAPHY AND ARCHÆOLOGY: UNITED KINGDOM.

The Prehistoric Antiquities of the neighbourhood of Bristol. By Prof. C. Lloyd Morgan.

A description of the early camps and megalithic remains of the surrounding country. Of those at Clifton and Stoke-Leigh new and careful plans have been made under the supervision of the author. In Stoke-Leigh the "dry-walling" which crowned the inner rampart, and has been exposed by special excavations, is compared with that at Worlebury; and the burnt lime and so-called mortar found in the Clifton and Burgh-walls camps is discussed.

The Circles of Stanton Drew. By A. L. Lewis.

The diameters of the circles, and the distances between them and the other stones of the group of monuments, are claimed to be in carefully measured proportions, among which the numbers 5, 7, 9, and 19 are particularly prominent. The author regards the "Cove" as the remains not of a tomb, but of a shrine.

[*Cf.* Lewis, *Proc. Brit. Ass.*, Liverpool, 1896; p. 924: C. W. Dymond, *The Megalithic Antiquities of Stanton Drew*, 1896.]

Human and Animal Remains recently discovered at Uphill, near Bristol. By H. Bolton.

The cave-deposit at Uphill has recently been excavated, and will be further examined by a Committee of the Association during the current year.

The Medieval Population of Bristol. By John Beddoe, M.D., F.R.S.

The substance of this paper is given above (p. 184) under "Physical Anthropology."

The Megalithic Remains of Dartmoor. By P. F. S. Amery.

A detailed account of the well-known monuments, in anticipation of an excursion of the Association.

The Lake Village at Glastonbury. Third Report of the B. A. Committee, drawn up by A. Bulleid, F.S.A.

Since the presentation of the last report much progress has been made with the exploration of this lake or marsh village. Twelve more dwelling mounds have been examined, as well as the ground between and around them. The southern end of the settlement has been completely explored, and the investigations have yielded much of importance. The timber substructure in this locality was in a better state of preservation and more massively made than in any part of the village hitherto examined, the arrangement of the logs being exceptionally clear. The recent finds included brooches and rings of bronze, adzes and billhooks of iron, leaden whorls, blue glass beads, gouges, and needles of worked bone, combs and hammer-heads of horn, much pottery, some jet and amber, portions of twenty-five human skeletons, including four complete skulls, and tubs, cups and ladles of worked wood. A new village has been partly excavated this year.

[Printed in full in *Proc. Brit. Ass.*, 1898; forthcoming. *Cf.* previous reports.]

The Place of the Glastonbury Lake Village in British Archaeology. By A. J. Evans, F.S.A.

The results of Mr. Bulleid's continued campaign of excavation on the site of the lake village establish certain definite conclusions as to the date and very homogeneous character of the remains. This conclusion was supplemented by another result. The whole series of remains was accumulated within a definite period of not very extensive duration, which closed before the days of Roman contact. On the other hand, the relics do not belong to the earlier style of the "late Celtic" fabrics in Britain, as illustrated by the Arras chariot-burials in Yorkshire, but might be referred to the first and second centuries before Christ, though some belonged to a date coming very close to the period of Roman influence. A typical form of fibula or safety-pin, on the other hand, is identical with specimens found in association with Ptolemaic coins of the second century before Christ in the Illyro-Celtic cemetery of Gurina, in the Gailthal. The remains at Glastonbury thus represent the results of the second wave of Belgic or East Gaulish conquest in this island. Other contemporary aspects of the same culture are seen in the Aylesford cemetery, associated with imported Italo-Greek vases, and in the Oppidum or fortified settlement at Hunsbury, near Northampton. The relics found in the well-known camp at Worlebury, Weston-super-Mare, show the same culture under a military aspect in this western district; but in the Glastonbury village the population was apparently unarmed and peaceful. The great value of the remains is

that they give a new and unique aspect of this type of late British culture. The peat has preserved objects, such as those of woodwork, which have elsewhere perished, and the artistic instincts of the race are illustrated by the way in which they covered even unlikely objects like wagon-wheels with decorated scrolls. The existence of various local industries is attested, and among them not only metal-working, but apparently glass-working. Not only beads, some of them of typically British fabric, were found, but also the blue slag from which they were doubtless made. In this connexion the name of Glastonbury itself,—which is simply a translation of the Welsh *Ynyswitrin* = Glass island,—may possess a significance that has not been hitherto suspected. This ability to make glass, the form of some of the fibulæ, and the character of the pottery point, as the Aylesford vases, to some connexion with the old Venetian civilisation about the head of the Adriatic. The great mobility of the Gaulish tribes during this period and their distant migrations account for the appearance of certain forms almost *per saltum* from this southern area.

Professor Boyd Dawkins had no doubt that Mr. Arthur Evans's derivation was correct, and remarked that the evidence showed a very high stage of civilisation.

Sir John Evans thought that the mere fact of the dwellings being in that unsuitable position seemed to point to the probability that the constructors were lineally connected with other lake-dwellers on the continent of Europe, since, near at hand, there were other sites far more suitable for dwelling places.

The Folk-lore of Guernsey. By the late Mr. Murray Aynsley.

The substance of this paper is given above (p. 186), under "Folk-lore."

The Folk-lore of the Outer Hebrides. By Miss A. Goodrich-Freer.

The substance of this paper is given above (p. 186), under "Folk-lore."

On some Walled-up Skeletons recently discovered at Ipswich. By Miss Nina Layard.

On a Buddhist Image found in an Irish Bog. By Miss A. G. Weld.

The figure is of bronze, about one foot high, in the earliest Cinghalese style, and in the "preaching" attitude, with raised right hand. It was found in 1886 in a bog fifteen miles from Kells, on the estate of Baltrasna, then belonging to Mr. Weld O'Connor; and is in Miss Weld's possession.

Sixth Report of the Ethnographical Survey Committee.

The Committee has appointed the Rev. H. M. B. Reid to carry on the work in Galloway initiated by the late Rev. Dr. Gregor; and the Rev. Elias Owen, F.S.A., and Dr. H. Colley March, as special observers in North Wales and Dorsetshire respectively. Of these Rev. H. M. B. Reid has sent some notes in anticipation of a fuller report. Dr. Colley March measured and took photographs of a number of typical inhabitants, and has compiled a preliminary report on the folk-lore of the district. It is hoped that a further and fuller report may be made next year.

Captain Bryan J. Jones has reported traditions and superstitions collected at Kilcurry, co. Louth, Ireland; and other communications are acknowledged from various localities.

[Printed in full in *Proc. Brit. Ass.*, 1898; forthcoming. *Cf.* previous reports.]

Report of the Committee appointed to co-operate with the Silchester Excavation Fund.

The area selected for excavation in 1897 included *insulæ* XVII and XVIII, between *insula* III, excavated in 1891, and the south gate, and on the west side of the main street through the city from north to south.

Insula XVII has its northern margin entirely filled with the foundations of two large houses of the courtyard type. The southern part contained the remains of a house of the corridor type of early date, portions of apparently two other houses of the same type, and two detached structures perhaps for boilers, of which no examples have hitherto been met with at Silchester. Near one of these was discovered a well containing at the bottom a wooden tub in an exceptional state of preservation.

Insula XVIII has its northern margin entirely covered by one house of unusual size and plan, and perhaps two others, but it also contains towards the south gate a corridor house with an attached inclosure which was perhaps a flour mill. A well near this building contained two more tubs.

The architectural fragments discovered in 1897 were few, the finds in bronze, iron, and bone of the usual character, including two enamelled bronze brooches, and a curious socketed object surmounted by the head of an eagle.

The pottery includes a number of perfect vessels of different kinds. One jar of grey ware with painted black bands is of unusual size.

A detailed account of all the discoveries was laid before the Society of Antiquaries on May 26, 1898, and will be published in due course in *Archaeologia*, as in former years.

[Printed in full in *Proc. Brit. Ass.*, 1898, forthcoming. *Cf.* Detailed papers in recent volumes of *Archaeologia*.]

On Traces of Early Kentish Migrations. By T. W. Shore, F.G.S.

Various names by which the Jutes of Kent were known to early chroniclers show that the Jutes were closely allied to the northern Goths. Early place-names, such as Goda and Geats or Geatas, and purely Kentish names compounded of the names Kent, or Ken, occur; and as Kent had no hinterland, Kentish people must have settled in unoccupied land of the other kingdoms. Such early Kentish colonies may be traced by these place-names, and by other place-names derived from the Jutish hero Hengest, and by survivals of *gavelkind* and kindred customs.

EUROPE.

Traces of Primitive "Terramare" Settlements in the Modern Towns of North Italy. By Professor W. M. Flinders Petrie.

Recent clearing at Castellaro di Fontanellato has disclosed the fact that the marsh towns of North Italy in the bronze age were arranged on a strictly square system of crossing roads; and this type of town was perpetuated in the regular plan of the camps of the Roman army. On examining the present plans of the cities of Lombardy, *e.g.*, Florence, Bologna, Parma, Cremona, Pavia, Piacenza, Milan, and Trent, the outline of the original square settlements can be plainly traced. The old boundaries are indicated by the ditches yet remaining, and the parallel roads that ran along the sides of them: by the roads radiating from the gateways, which afterwards became streets in the enlarged towns; and by the surviving names of streets referring to walls and gates which had long since been swallowed up in new buildings.

Sir John Evans pointed out that the existence of square forms of towns did not itself prove that these forms were of pre-Roman date.

Professor Flinders Petrie replied that, granting or assuming the pre-Roman date, the square forms of the towns would indicate the presence of *Terramare* settlements.

Mr. Arthur Evans considered that, though an original nucleus resembling the arrangement of the *Terramara* could be made out in some Italian cities, special investigations would in each case be necessary before any origin nearly so ancient could be inferred. At Florence, for instance, where name and tradition alike pointed to a Roman origin, the Roman camp (remotely derived from the *Terramara*, as Pigorini had shown) seemed to offer a more natural explanation. At Milan again how could the old Italic form, if it ever existed on that site, have survived through centuries of Gaulish occupation? Purely artificial town-plans like that of Hippodamos at Thurii, as later those of Frederic II and Edward I, must also be taken into consideration.

ASIA.

The Mantzu of Western Sze-Chuan. By Mrs. Isabella Bishop, F.R.G.S.

The author started from Wei-Chau and traced the Siao-ho, or lesser branch, up to its sources at an altitude of about 11,000 feet, on the Isu Kuh Shan range. At La Kuh Lao, the last official post of China in that direction, she entered upon the territory of the Issu-su of Somo and lived for some weeks among the Mantzu, being lodged either in their houses or on their roofs.

She then described their villages and dwellings, their devotion to Lamaistic Buddhism, the ceaseless invocations in family temples, and the numerous external signs of religion, including prayer cylinders made to revolve by water power. She gave an account of their system of government, and their marriage and burial customs. Their most noted characteristic is the position accorded to women, who are as unfettered as in England and America, and on an absolute equality with men, possessing legal rights in respect of property, and sharing occupations and amusements with men. She mentioned the freedom of the people from epidemics and many diseases, and the remarkable prevalence of goître among them, and described minutely the dress and ornaments of both sexes, and pointed out certain resemblances to the Lolos of Yun-nan as described by Mr. Colborne Babir. The people have their own language, but it was written in Thibetan characters. The height, size, and stability of their stone dwellings were then touched upon, especially the lofty four-sided stone towers of extreme antiquity, which are a feature of all the villages, while the Castle of Somo, the residence of the Ju-ssu, was indicated as of extreme stateliness and grandeur. The characteristic of their physiognomy is, that it is European in expression as well as in feature, and recalls the Latin races. The paper was illustrated by lantern slides from photographs taken by the writer.

The Hill Tribes of the Central Indian Hills—their Ethnology, Customs, and Sociology. By William Crooke, B.A.

The author discusses the ethnological affinities of the Dravidian races, with races exterior to India; and with the existing population of Northern India; the evidence from anthropometry collected by Mr. Risley, and by the author in his book lately published on *The Tribes and Castes of the North-Western Provinces and Oudh;* and the current theories of the Aryan influence on the existing races; which seems to

have been more of a social than of an ethnical character. He attempts to controvert the belief that the existing Dravidian tribes are relics of a race driven into the hill tract by the advancing Aryan invaders; and considers, from a special personal study, the evidence for the matriarchate and descent through the female; for influence of totemism on marriage; for group marriage, tree marriage, and rules of exogamy; and for burial rites and the customs of burial in the earth, water burial, cremation; and describes their present social condition and industries.

[Read before the Anthropological Institute, November 22nd, 1898: to be published in the *Journal.*]

The Swati and Afridi. By Colonel Sir Thomas Holdich, K.C.I.E.

Our recent campaigns in India have been directed against tribes-people who occupy a district which we have lately cut off from Afghanistan, once known as the province of Roh.

The dominant tribes are Afghans, who have adopted the general designation of Pathan, in common with the Rohillas, who were always Pathans. Afghans now speak the Pathan, or Pushtu, language, and recognise the Pathan civil code; but they recognise no kinship, and claim to be true Ben-i-Israel.

These Afghans objected to being cut off from Afghanistan by the demarcation of a boundary, and believed that they were to be annexed to India. Hence the recent risings.

The connection between the Afghans of Swat and the Darani Afghans of Kabul and Kandahar is explained, with a short history of the Swatis, and of the manner in which they commenced hostilities against us.

The Afridi is of Rajput origin and independent character. The Afridi clans are scattered, and divided by blood feuds, and recognise no common head. They are thoroughly loyal to any cause they serve, and of high general intelligence.

Full and detailed study of the frontier peoples and of their history is absolutely essential in order to draw correct conclusions as to their future status.

[To be read at the Anthropological Institute, and published in the *Journal.*]

Tabu in Japan, in Ancient, Mediæval, and Modern Times. By K. Minakata.

The substance of this paper is given above, p. 187, under "Folk-lore."

On the Boat-building of Siam. By H. Warington Smyth, M.A., F.R.G.S.

The various types of river craft in use among the Siamese are admirably adapted to the waters they are used to navigate; the teak-built *rua pet* and rice boat to the lower reaches, and the long *rua nua* or northland boat of *thingan* wood to the upper waters of the Menam River. The "dug-out" boats of the Mekawng River have bamboo fittings along the gunwale which render them uncapsizable and unsinkable.

Among the sea-going craft on the coast of Siam the primitive Malay lugger, the *rua pet*, with spoon-shaped bow, wood fastenings, and high-peaked lug sails, the *rua chalom* of the native Chinese traders, with peculiar double rudders, and the Chinese junk itself are all to be found, exhibiting a number of peculiarities in build and rig.

On the Reed Organ of the Lao Shans. By H. Warington Smyth, M.A., F.R.G.S.

A brief description of the simple fourteen-reed instrument in use among the Lao Shans of the Mekawng Valley, with an example of its characteristic and monotonous music.

Ad interim Report of the Torres Straits Anthropological Expedition.

Professor A. C. Haddon reports that his party reached Thursday Island on April 22, 1898; Murray Island, where a number of anthropological and psychological observations were made, on May 6; and Port Moresby on May 31. Short visits were paid to Kaile, Kappakappa, and Hula. The annual fertility dance at the neighbouring village of Babaka was witnessed and photographed: it is similar to the famous annual dance at Kalo, about three and a-half miles distant. At Kerepunu the party photographed canoes being hollowed out with stone adzes, and elsewhere the processes of tattooing, fire-making, pile driving, pottery manufacture, &c. Drs. Rivers, MacDougall, and Myers have obtained a large number of observations in experimental psychology, which promise to be of great interest.

On the Tribes inhabiting the vicinity of the Mouth of the Wanigela (Kemp Witch) River. By R. E. Guise.

[Read at the Anthropological Institute, November 8th, 1898; to be published in this *Journal.*]

AFRICA.

Egypt under the First Three Dynasties, in the Light of Recent Discoveries. By Professor W. M. Flinders Petrie.

Discoveries during the last three years at Koptos, Nagada, Abydos, and Hieraconpolis, have revealed remains belonging to the ages before 4,000 B.C., which have hitherto been the starting point of known history. To the Libyan stock, with some negro mixture, which occupied Egypt in its earliest civilization, belonged the objects found at Nagada—which had been at first temporarily assigned to a new race, but can now be safely assigned to the pre-dynastic stock about 5,000 B.C., and even earlier. In the graves of this aboriginal race were found bowls of black clay with patterns imprinted upon them, which were of great importance in considering the relation of this civilization to others in the Mediterranean. For in each of the countries where this has been found—Spain, Bosnia, Egypt, and Hissarlik—it was contemporary with the introduction of metals. The proximate date of this introduction, viz., 5,000 B.C., accords very well with the time necessary for arriving at the high culture attained later. Therefore these discoveries are of great value in giving the relative state of Egyptian civilization to that of the rest of the world at the introduction of the dynastic rule. There is a wide difference between the people of 5,000 B.C. and those of 4,000 B.C., but no difference between those of the latter period and modern times. This shows that a different race entered the country about that period.

Next come the earliest dynastic remains; the presumed tomb of King Mena, the founder of the dynastic history of about the date of 4,700 B.C.; then the remains of other royal tombs found at Abydos belonging to the first three dynasties. The gradual decay of flint working between 4,500 B.C. and 1,500 B.C., as metals came into use and copper was gradually hardened into bronze, has no parallel in the world.

The population of the pre-dynastic age was different in type from that of historical times, and in the early monuments the presence of diverse types is very clear, some being shaven, some bearded, some long-haired. The discoveries in question go far to solve the mystery of the origin of Egyptian civilization. Egypt was then an originator in the arts and not a borrower, but ever since then most of the nations of the earth had been borrowers and not originators.

Sir John Evans regarded the wonderful flint knives shown as the culminating point of an art stretching over a vast series of years.

Mr. Arthur Evans, in commenting on the preceding paper, expressed great satisfaction that Professor Petrie had returned to the view that he first put forth with regard to the early relics from Koptos, and that he now accepted the prehistoric date of the bulk of the remains found at Nagada and other contemporary sites. The extensive survival of this earlier indigenous culture, side by side with the intrusive elements introduced by the dynastic race, is now clearly ascertained. On the other hand, the progressive stages of evolution in the pottery of the purely prehistoric type, as seen in the series from Nagada, now preserved in the Ashmolean Museum, show that this phase of indigenous culture must have extended over a very large period of time. The latest class, as was now proved, was anterior to 4,700 B.C., the approximate date of the First Dynasty; but it was the most primitive types, going back perhaps over a millennium beyond this, that presented the most striking parallels to the Neolithic pottery of the European shores of the Mediterranean,—notably, it might be said, of Sicily and Spain. The European affinities of this prehistoric Egyptian culture would be the more readily explicable if, as seemed most probable, they could be attributed to the widespread Libyan race. In support of the Libyan hypothesis he cited the discovery, which he had recently verified, of a series of Neolithic stations extending along the Wed Rir on the Constantine borders of Sahara far to the south in the direction of the Upper Niger, containing, besides beautifully worked arrow and lance-heads, flint rings perfectly analogous to some of the most characteristic specimens found at Nagada. These remains are embedded in layers of ostrich eggs. The Dolmen pottery of Algeria and Tunisia showed similar affinities. At Malta, again, the grotesque figures of squatting steatopygous females found in the prehistoric building known as Hajar Kim are in form and attitude identical with those from the prehistoric Egyptian graves. The connexion between this indigenous culture of Egypt and perhaps of a large North African zone with primitive Greece is also becoming apparent. It shows itself in the case of certain figures on an early class of pictographic seals found by him in Crete; and among the relics of the indigenous kind found at Hieiakompolis during Mr. Quibell's last excavations is a lapis lazuli female figure, with the arms folded in front of her, of a type which immediately recalls the marble figures from the præ-Mycenæn tombs of the Greek islands. The general tendency of the new Egyptian evidence would be to carry back the prehistoric chronology of Southern Europe.

On South African Stone Implements. By George Leith.

[To be read at the Anthropological Institute, December 6th, 1898.]

West African Conceptions of Property. By Miss Mary H. Kingsley.

The geographical distribution of the true negro stock is worthy of attention, because among these peoples is found the most highly developed form of native African culture; and because in the matters of physical and mental characteristics the true negro differs greatly from the better known Bantu stock. By the failure to recognise these differences, the work of Sir A. B. Ellis on the true Negro, and that of Bastian on the true Bantu, has not yet been given its full scientific value. The true negro stock is masked in its fringe-regions by the ability of the peoples of this stock to acquire alien languages and culture. In the northern fringe-regions of its distribution it is suffused with Berber culture and Mohamedanism; in its southern and south-

eastern by Bantu language and culture, with a varying percentage of European adulteration along the sea coast from the Gambia to the Cameroons. Fairly certain tests for the true negro, not masked by alien culture and religion, are (*a*) that the true negro does not keep slaves in separate villages from their owners; (*b*) that he leaves sanitary public affairs in the hands of Providence; (*c*) that he has a regular military organisation with a separate war chief and peace chief; (*d*) that among the true negro the cult of the law god is far more developed than among the Bantu; that the true negro has not a female god as main ruler of mundane affairs as the Bantu has. The best region to study the institutions of the true negro is the region of the Oil Rivers, where he has suffered least from alien adulterations.

The three kinds of property existing in West African culture are (1) an ancestral property of the tribe, connected with the office of the headmanship and called among the true negroes the *stool*, and among the Bantu Fjort the *cap;* (2) family property in which every member of the family has a certain share, to which every member has to contribute, and on which every member has a claim; (3) private property, *i.e.*, that acquired or made by a man or woman by personal exertion over and above that made by them in co-operation with other members of their family (which is family property), that gained by gifts, and that made in trade by the exertion of superior trading ability.

Each of these kinds of property is equally sacred in the eye of native law. The only kind that can become another kind of property is the private. This constantly merges into public property on the death of its individual owner. Stool property and family property remain of their kind for ever, and cannot be alienated, though liable, with all the other kinds, to meet debt. Wealth is divisible into (*a*) the means by which property can be acquired and developed, to which division belong wives and slaves; (*b*) property in power over market rights, utensils, canoes, arms, furniture, and trade goods. It is in his capacity to command these things that the wealth of a true negro man or woman consists, and it is by slaves and by relationship with influential people that he can do this. Property, therefore, is guarded by and exists under the law in the hearts of the people themselves; represented by the cult of the law god (the so-called secret society of the district—Oru, Purroh, Egbo, Belli, etc.) and by the influence of religion.

[Published substantially in Miss Kingsley's *West African Studies*, 1898.]

On the Natives of the Niger Delta. By M. le Comte Charles de Cardi.

[To be read at the Anthropological Institute.]

The Native Secret Societies of the West Coast of Africa. By H. P. Fitzgerald Marriott.

[To be read at the Anthropological Institute.]

Ancient Works of Art from Benin City. By C. H. Read, F.S.A.

[*Cf.* Read and Dalton, *Journ. Anthrop. Inst.*, xxvii, pp. 362 ff., and Sir R. Moor, *Blue Book: Africa*, No. 6, 1897.]

AMERICA.

The North-West Tribes of Canada.—Final Report of the B. A. Committee.

The voluminous report, which is printed in full in the *Proc. Brit. Ass.*, 1898, and will shortly be republished in a separate form, together with the eleven preceding reports and a full index, consists of two parts:—(1) Report of the investigations into

the physical characteristics of the tribes of British Columbia by Dr. Franz Boas and Mr. Livingston Ferrand; (2) a summary of the work of the Committee in British Columbia by Dr. Franz Boas.

Professor Tylor, in introducing the Report, bore testimony to the very high value of the work done by that Committee; but pointed out that while the work of the Committee has materially advanced our knowledge of the tribes of British Columbia, the field of investigation is by no means exhausted. The languages are still only known in outlines. More detailed information on the physical types may clear up several points that have remained obscure, and a fuller knowledge of the ethnology of the northern tribes seems desirable. Ethnological evidence has been collected bearing upon the history of development of the culture area under consideration; but no archæological investigations have been carried out which would help materially in solving these problems. For this reason he thought it was a matter for congratulation to know that the ethnological investigation in British Columbia will not cease with the operations inaugurated by the Committee but will be continued by the Committee for an ethnological survey of Canada, as well as by American observers.

Sir John Evans raised the question whether the Committee had been able in the course of their labours to acquire any of those old personal objects which formed such an interesting subject in the reports. In the museum at Victoria there is a collection of the antiquities of the North-Western tribes of Canada, but the bulk of the objects collected in Canada are still in the museum of New York. It would be a graceful act if the authorities of that museum were to present to the British Museum a typical collection of the objects that Dr. Boas had obtained, assisted as he had been by the British Association.

Dr. G. O. Dorsey, of the Field Columbian Museum of Chicago, stated that one of the objects of his present visit to England was to arrange for the transfer of portions of the collection under his charge to some of the museums in England.

Ethnological Survey of Canada.—Second Report of the B.A. Committee.

This investigation presents two main branches: that dealing with the white races and that dealing with the aborigines or Indians. These, however, are not entirely distinct, for a particularly interesting line of enquiry is that relating to the Métis or "half-breeds," resulting from the intermixture of the whites and Indians, but nothing has yet been accomplished in the last-named field of work.

Three sets of anthropometric instruments have been purchased, and have been distributed to Mr. Charles Hill-Tout of Vancouver, to Mr. A. F. Hunter of Barrie, Ontario (who has associated with him Dr. F. Tracey of Toronto), and to Dr. A. C. Hebbert of Montreal. A specially adapted camera has been placed in the hands of Mr. Hill-Tout.

Communication has been opened with the American Committee for an Ethnographic Survey of the United States and with the several provincial governments of Canada, the latter for the purpose of obtaining, if possible, grants in aid of photographic and other registration.

Mr. David Boyle has been commissioned by the Government of Ontario to obtain photographs of some of the Indians of the province, and has expressed his intention of conducting this work as far as possible in conformity with the requirements of this Committee.

The preservation of the Serpent Mound in Otonabee township, Ontario, has been the subject of letters to the clerks of the township and to the Peterborough County

Council. Further representations have since been made to the Government, and it is probable that the mound may be acquired next year.

Mr. A. F. Hunter has undertaken an inquiry in regard to the composition of the population of the several counties of the province of Ontario on the lines adopted by Mr. B. Sulte in regard to the province of Quebec.

In British Columbia the immigrant population is so newly established and so heterogeneous in character, that it seems scarcely possible to pursue with profit a similar method of study. The native races, however, afford a field of inquiry requiring prompt and efficient action, and Mr. C. Hill-Tout has been able to collect a number of Haida stories and beliefs in Appendix I of the Report.

Meanwhile Mr. B. Sulte has followed up the indications of the habits and mode of life of the early immigrants from France to Quebec by means of such contemporary records as still exist. This paper (Appendix II. of the Report) explains the mode of living of the explorers, and afterwards of the first settlers on the shores of the St. Lawrence, as well as the modifications introduced into their habits, in order to conform to the requirements of the new country; and distinguishes two phases of colonisation from 1535 to 1631, and from 1632 to 1660, the latter in every way more efficient than the former.

Rock Drawings from British Columbia. By Mr. C. Hill-Tout.

These drawings, or paintings, were found on a cliff about twenty miles from Vancouver. The Indians of the neighbourhood knew nothing of their meaning. Duplicate copies of the photographs exhibited have been added to the collection of the Anthropological Institute.

Notes on the Tarahumari Indians. By Mr. A. Krauss, jun., F.R.G.S.

The Tarahumaris are a primitive people, occupying an oblong strip of country about 60 or 70 miles wide, in the Sierra Madre range, situated chiefly on the western side of the "Continental Divide." They are seldom to be found either on the high plateau land of Chihuahua or in the foot hills of Sonora and Sinoloa, and even of their own district they appear to know nothing, beyond their own immediate neighbourhood. The scenery of their country is wild and grand, with cañons 4,000 and 5,000 feet deep. Although shut off by the nature of the district from intercourse with the rest of the country some portions of the tribe have yet been in contact with civilised people for at least 100 years, for the ruins of small mining camps and Catholic missions are to be found here and there in the bottom of the cañons. This outside influence has left some trace, and it is now impossible to separate their original customs and beliefs.

The people are on the average short in stature, few reaching 5 feet 8 inches. Their limbs are small but wiry, their hands and feet often delicately formed. They have clear cut and fairly regular features. Their hair, which is long, black, straight, and rather coarse, is generally allowed to hang down round the head, and is kept in place by a white or red band tied tightly just at the top of the forehead, or is sometimes fastened together at the back in a single plait, secured with a braid worked in red and white patterns.

They may be said to have no moustache or beard, though men are rarely found with a few straggling hairs on their face.

They are essentially an agricultural people, growing mostly maize. Some possess large herds of goats and flocks of black sheep. From their wool are made durable blankets. The few cattle are used for ploughing. Meat is rarely eaten, but occasionally, if an animal, even a mule, dies they use it for food. Water is their

usual drink, but they make a refreshing fermented liquor called *teshuin*, tasting of sour milk and turpentine: this is drunk freely at feasts. They seldom smoke, except when drinking *teshuin*, and then only cigarettes made by rolling tobacco in Indian corn husks.

Their dress is simple, and with men consisted of a cloth round the loins, being kept in position by a *faqua* or sash, varying in width from $1\frac{1}{2}$ inches to 4 inches. The women wear a sort of skirt, also made of dark brown or black wool.

Their cooking utensils are of the simplest description, and consist of earthen bowls shaped by hand.

Their agricultural implements consist of a plough, a pointed stick, and occasionally a sort of wooden hoe.

Their only weapons were bows and arrows, the bows varying from three to four feet long. Bits of old iron are used for making arrow heads or a knife.

Their language is limited to about 300 words, and they did not appear able to count beyond ten.

Their dwellings generally consist of three distinct buildings—a small stone hut, a sort of box about 8 to 10 feet square, and a simpler structure. In the more remote districts many still live in caves.

They have no knowledge of metal working, the few knives and axes they possess being purchased at the Mexican mining camps in the mountains. They have a superstitious dread of showing a mineral vein to a stranger; though they will sometimes bring a sample of ore, without saying where it was found.

Their musical instruments are considerably in advance of their knowledge of harmony. Violins and harps are fairly common, copied with surprising neatness from Spanish models. The only really native instrument they possess is the *huage*, a hollow gourd partly filled with small pebbles and fastened to the end of a stick.

Their dancing consists largely of simply stamping in a solemn manner.

They believe in a personal God, pictured as a white man elaborately dressed with a decorated jacket and large sombrero. They place him in the centre of Heaven seated on a huge pillar, and with him a goddess, who presides over a large table laden with eatables, at which the souls feast. Besides these there is a devil chief of an army of evil spirits. Their Heaven is not the happy hunting ground of the North American Indians, but simply a large country with plenty to eat and drink. The place where their evil spirits dwell is a dark place that smells very bad. The God made everything, and when first he visited earth he brought a beautiful woman with him: the Tarahumaris are the result of their union, while all foreigners are the children of the Devil.

The medicine man is supported by the tribe, and protects them against evil spirits, despatches their souls to Heaven, and acts as doctor.

Old stone buildings are reported in various places, but there appears to be no tradition as regards the builders of them, and the Tarahumaris would not approach them, saying that evil spirits lived there. One of these structures in the Munerachic cañon has been visited by an American doctor: it was well and solidly built, and different from the Tarahumaris' stone huts.

The Mythology of the Musquakie Indians. By Miss Mary A. Owen.

[The substance of this paper is given above (p. 187), under "Folk-lore."]

AUSTRALIA.

On the Natives of N.W. Australia. By L. de Rougemont.

A popular account of native manners and customs without authenticated indications of tribe or locality.

[Privately printed 1898. *Cf.* papers from the same source in the *Wide World Magazine*, Nos. 5–8.]

On the Survival of Palæolithic Conditions in Tasmania and Australia, with Especial Reference to the Modern Use of Unground Stone Implements in West Australia. By Professor E. B. Tylor, F.R.S.

The stone implements from Tasmania, the making and use of which by the natives came under the observation of the colonists during the first half of this century, have a character which may be called quasi-palæolithic. They were fragments or flakes of stone, in no case ground, but edged by chipping on one face only, and trimmed so as to afford a grasp to the hand, no haft of any kind being used. These instruments correspond to some extent with scrapers, etc., belonging to the Drift and Cave periods in Europe; but their general rudeness, and the absence among them of symmetrical double-edged and pointed implements like the flint picks of Old World palæolithic times, place the modern Tasmanians at a distinctly lower stage than the Europeans of the mammoth period. The stone implements found in Tasmania, of which some good collections have now been made, indicate a state of the Stone Age in past times not essentially different from that found in actual existence before the disappearance of the native population. It is necessary to consider these quasi-palæolithic implements, old or new, apart from the few cases of ground stone hatchet blades, fixed in handles, which are now admitted to have been introduced in modern times by Australian natives.

The purpose of the present paper is to offer evidence making it likely that the early Stone Age condition characterising Tasmania extended within no distant period over the whole Australian continent. A native Australian hatchet, hafted with gum on a stick handle, was exhibited, lent by Mr. W. Ayshford Sanford, of Nynehead Court, Somerset, who brought it half a century ago from the Perth district of West Australia. The blade of this instrument, with its unsymmetrical edge, formed by chipping along one side of the original flake, is simply indistinguishable from the ordinary Tasmanian form placed beside it. Professor Tylor stated that, unwilling to judge hastily from a single specimen, he had for years been in correspondence with anthropologists in Australia as to the presence there of such implements, and had lately, through communications from the Bishop of Tasmania and Mr. Alexander Morton, of the Hobart Museum, received intelligence that the latter, than whom no one better understands the Tasmanian implement question, has, on a late journey to the little known Murchison district in West Australia, while not meeting with ground stone axes, found the natives using chipped stones, quite similar to those used by the Tasmanian aborigines, as shown by photographs sent for comparison. These quasi-palæolithic implements not having yet been dispossessed in this district by the ground stone hatchets, which apparently were introduced from the Torres Straits region, it would seem that this neolithic invasion was of no remote date, and that the vast area, including Australia as well as Tasmania, may have been till then peopled by tribes surviving at a level of the Stone Age which had not yet risen to that of the remotely ancient European tribes of the drift gravels and limestone caves. The writer of the paper, while disclaiming any hasty inference, called attention from this point of view to the importance of, and the similarities between, the modern Australioid skulls and the prehistoric skulls of Neanderthal, Spy, Padbaba, etc.

Miscellanea.

The Editor is asked to insert the following enquiry from Miss Godden :—

I am asking in the *Journal of the Folk-lore Society*,[1] and in other quarters, for rites, customs, or legends, which may throw light on the following curious customs reported by Diodorus Siculus, and on the occurrence of similar incidents in Greek and Roman art and English folk-lore. I am particularly anxious to hear of any like customs or legends among savage or barbarous peoples. May I venture to hope that some instances may be forthcoming from members of the Anthropological Institute?

Diodorus says: "In the city of Acanthus, towards Libya beyond the Nile, about 120 furlongs from Memphis, there is a perforated pithos,[2] into which they say 360 of the priests carry water every day from the Nile. And the fable of Ocnus is represented near at hand, on the occasion of a certain public festival. One man is twisting a long rope, and many behind him keep untwisting what he has plaited."[3]

These incidents of futile rope-making and futile water-carrying recur in the rope eaten by an ass, and in the perforated water-vessel of Greek and Roman art; and in a rope made of sand, and a perforated shell for water-carrying, in English folk-lore. A sand-rope also appears in a mediæval Arabic story.[4]

The points on which I should be specially glad of information are :

(1) Ritual use of ropes, or of perforated objects for carrying water.
(2) Futile rope-making in custom or story.
(3) Futile water-carrying in custom or story.
(4) Asses in connexion with any of the above acts; and in connexion with (*a*) water in any form, (*b*) death and the underworld.

G. M. Godden.

Ridgfield, Wimbledon, London.

The first and second series of *The Ethnographical Album of the Pacific Islands* included only objects to be found within the British Islands in the Pacific. But a more recent tour by Mr. Edge-Partington has led to the discovery of so much material, entirely new in character, that a third series is on the point of being published, and will be issued to subscribers only. It will consist of about 225 plates, similar in size and character to those of previous issues. The number of copies will be limited to 150 for the original subscribers, with 25 additional copies for British Colonies.

It is understood that Professor A. H. Keane is about to issue a new work, under the title of *Man, Past and Present.*

[1] *Folk-Lore*, December, 1898.

[2] *Pithos*, a vessel of large size, used for stores, sometimes sunk in the ground as a cellar.

[3] *Diodorus Siculus*, i, 97.

[4] *Pausanias*, x, 29, 2; J. G. Frazer, *Pausanias*, vol. v, p. 376; *Edinburgh Review*, April, 1897, p. 458; *Journal Hellenic Studies*, xiv, p. 81; *Supplemental Nights*, Burton, lib. ed. xii, 24; note 15, *Lay of the Last Minstrel*, ed. 1869; *Denham Tracts*, ii, 116; Hunt, *Popular Romances of the West of England*, 3rd ed., pp. 131 ff.; Courtney, *Cornish Feasts and Folk-Lore*, p. 73; *Notes and Queries*, Dec. 1850.

JOURNAL

OF THE

ANTHROPOLOGICAL INSTITUTE

OF GREAT BRITAIN AND IRELAND.

SPECIAL MEETING.

OCTOBER 26TH, 1898.

F. W. RUDLER, Esq., F.G.S., *President, in the Chair.*

The Minutes of the last Meeting were read and signed.

As this was the first meeting of the session the PRESIDENT called attention to the losses which the Institute had suffered from death during the recess, referring especially to the Right Hon. Sir George Grey and to Sir Henry Peek, Bart. Reference was also made to the Bristol Meeting of the British Association held in September, when the Anthropological section had a successful session under the presidency of Mr. Brabrook, C.B.

The PRESIDENT explained that the present session of the Institute opened rather earlier than usual, in order to secure a communication from Professor Flinders Petrie, who was shortly returning to Egypt.

Professor PETRIE then read his paper on "Our present knowledge of the Early Egyptians," which was fully illustrated by a fine selection of lantern slides.

After the reading of the paper some discussion was carried on by Dr. GARSON, Mr. A. LEWIS, and others, and a cordial vote of thanks was passed to Professor Petrie.

ON OUR PRESENT KNOWLEDGE OF THE EARLY EGYPTIANS.

By Professor W. Flinders Petrie, D.C.L., LL.D., F.S.A.

In this communication the author gave a summary of the principal discoveries during the last five years, which had revealed the rise of Egyptian civilisation. It had been said that the beginning of the fourth Egyptian dynasty—the age of the Pyramids, about 4000 B.C.—was the furthest date to which we could go. The puzzle was that there had been no trace of the origin of this high civilisation. But now entirely new discoveries during the last five years at Koptos, Nagada, Abydos, and Hieraconpolis, had discovered remains belonging to the ages before 4000 B.C., which had hitherto been the starting point of known history.

Beginning with the Libyan stock, with some Negro admixture, which occupied Egypt during its earliest phase of civilisation, Professor Petrie exhibited illustrations of some of the objects he had found at Nagada—including statuettes, games, slate palettes for grinding paint, beautifully ribbed flint knives of extreme delicacy, forked lances and arrows, carved spoons of ivory and bone, harpoons, bracelets, and combs. These were at first temporarily assigned to a new race, as we knew nothing more about them; but further research had shown that they could now be safely assigned to the pre-dynastic stock about 5000 B.C., and even earlier. In the graves of this aboriginal race there were found certain bowls of black clay with patterns imprinted upon them. These were of much importance in discussing the relation of this civilisation to that of others in the Mediterranean area. In each of the countries where this had been found—in Spain, Bosnia, Egypt, and Hissarlik—it was contemporary with the introduction of metals. Metals had just been introduced, and therefore in all cases this pottery was associated with the same state of civilisation. The proximate date of this was the close of the Neolithic period and the introduction of metals—viz., 5000 B.C.—and that accorded very well with the time necessary for arriving at the high culture attained by 1500 B.C. These discoveries were consequently of much value in revealing the relative state of Egyptian civilisation to that of the rest of the world at the introduction of dynastic rule. There was a wide difference between the people of 5000 B.C. and those of 4000 B.C., but no difference between those of the latter period and Egyptians of Roman age. This showed that a different race entered the country between 4000 and 5000 B.C.

Then followed the dynastic remains of the presumed tomb of King Mena, the founder of the dynastic history, of about the date of 4700 B.C., and then the remains

of other royal tombs found at Abydos belonging to the first three dynasties. The skill of flint working had undoubtedly gone down and was fast dying out. There was a gradual decay of flint working between 4500 B.C. and 1500 B.C., as metals came into use and copper was gradually hardened into bronze. Professor Petrie showed diagrams of cylindrical seals as used by the kings of the first three dynasties, and impressions of such cylinders, which were vastly more frequently found than the seals themselves. He then exhibited representations of tablets and slates, bearing figures of animals and birds, such as the hawk, bull, lion, and leopard, which manifested a well-acquired knowledge of these animals, as well as of the ibex, gazelle, and antelope. Large numbers of animals, such as the calf, monkey, and dog, had been found modelled in green clay, together with a model of a lion in red pottery. These finds were very important, as they showed the skill of clay modelling of the earliest dynasty, the rise of the art of modelling, and the Egyptian ideas and appreciation of the forms of animals and of the human body. These important monuments of the civil life of the early kings proved that glazing was a speciality of the original people, and that Egyptian art reached its high-water mark somewhere about B.C. 4000. Slate tablets and mace-heads showed the kings in triumph over their enemies, receiving captive kings, opening the public works, or reclaiming the marshes. Other vessels had dedications written upon them. The handled copper vessels showed the most advanced metal work found of the first three dynasties.

The population of the pre-dynastic age differed in type from that of historical times, and in the early monuments the presence of diverse types was very clear, some being shaven, some bearded, some long-haired. We had at last before us evidence of the close of the period previously considered pre-historic, showing the development of the art, writing, and civilisation of Egypt and the composition of a race which had since maintained its character during 6,000 years. The puzzle was how this civilisation arose, and we had discovered evidence to solve this puzzle. Egypt was then an originator in the arts and not a borrower, but ever since then most of the nations of the earth had been borrowers and not originators. Here we were studying the history of a country, not borrowing but developing a vast and complex civilisation from its own resources.

ORDINARY MEETING.

NOVEMBER 8TH, 1898.

F. W. RUDLER, Esq., F.G.S., *President*, in the Chair.

The Minutes of the last Meeting were read and signed.

The PRESIDENT, in introducing the paper of the evening, regretted the absence of the author, who had just left on his return to New Guinea.

The SECRETARY—Mr. T. V. Holmes—then read Mr. R. E. Guise's paper on "The Tribes inhabiting the mouth of the Wanigela River, New Guinea."

The reading was followed by the exhibition of a number of lantern slides belonging to Mr. Guise, and also of a series of slides lent by Mr. N. Hardy, and representing the various tribes, scenery, etc., of New Guinea.

The Rev. R. WARDLAW THOMPSON, Foreign Secretary to the London Missionary Society, joined in the discussion that followed. He pointed out that he believed the river which is here called the "Wanigela," and which is known on the map as the Kemp-Welch River, is not known as the Wanigela by the natives, the Wanigela being the river that flows into the head of the Marshall Lagoon, some miles to the east of Kalo.

Mr. JOHN JENNINGS and Mr. G. L. GOMME also joined in the discussion, which was brought to a close by the PRESIDENT, who proposed a vote of thanks to Mr. Guise, the author of the paper; to Mr. Holmes for reading it; and to Dr. Garson for exhibiting the slides. This vote of thanks was carried unanimously.

ON THE TRIBES INHABITING THE MOUTH OF THE WANIGELA RIVER, NEW GUINEA.

By R. E. Guise, Esq.

Before reading my paper, I think that it is due to my audience that I should state my qualification to speak with authority on these tribes, whose customs I propose to make the subject of my paper. With the exception of a year, I have lived amongst them since 1883.

At that time there was no Government, and I saw the native living his free and unfettered life—ever fighting, and ever watchful and suspicious of treachery. His life has now, of course, much changed, through the enforcement of law by the Government; but the old leaven still remains, and though the native carries no spear, except a fish spear, and his shield is fast decaying on the shelf above his fire-place, he still preserves his restless watchful eye, and his character is unchanged.

This, however, before the advance of the European acquirer of land, will not last long; and I hope that the facts here given will be useful in recording the characteristics of one of the few remaining primitive races when unaffected by civilisation and its doubtful benefits.

The tribes of Bulaa, Babaka, Kamali, and Kalo inhabit the whole of Hood Point in the Central District of British New Guinea, Kalo being situated at the mouth of the Wanigela River—Babaka and Kamali two miles inland from the extremity of the point; and Bulaa (a marine village) the extreme point. They all speak a dialect of the one language, though Kalo, Babaka, and Kamali show many signs in their language of intercourse with inland tribes. Kalo numbers about 1,500, Babaka 500, Kamali 400, and Bulaa 750.

In physique the Bulaa people are of a much more robust type than the inland tribes. This, however, may be the effect of their almost exclusive fish diet. They emigrated some 30 years ago from a tribe living at the mouth of Hood Lagoon, where they were held in irksome subjection by a tribe called Keapara. They had no lands; nor were they allowed by the Keaparans to acquire any. Necessity thus forced them to the sea for a living, and they are at this moment far superior to all other tribes in New Guinea in the art of netting fish.

Their own account of their origin is as follows:—

Many ages ago the surface of the earth was uninhabited, but in its centre lived a dog and a python. One day the dog met the python, and remarking that they were both living very lonely lives, suggested that they should improve matters by marrying. The python was quite agreeable, and they married. In

course of time the python produced two male children and one female child. On these children arriving at the age of puberty, the two men married the one woman. To one she bore two girls and to the other two boys. They grew up and married, and had a numerous progeny.

One day the dog organised a large hunting party, and during the hunt an iguana was put up, who, on being disturbed, took refuge in a very lofty areca nut tree. The dog ordered one of his sons to dislodge the animal by climbing after it. He followed it up till he found that it had escaped on to the crust of the earth by a cave through which the areca nut tree passed. He followed it, and was so struck by the beauty of the scenery around him, bathed as it was in bright sunshine, that he forgot about the iguana, and returning at once to his relations, described to them what he had seen, and urged them to leave the gloom and darkness in which they lived, and follow him to form villages above. After much discussion six couples agreed to accompany him. The dog was much enraged at their decision and intimated his intention of cutting down the tree should they carry out their intention. The following day they started, and having reached the crust of the earth, the dog cut down the palm and barred their return. On their arrival at the top, each couple took different directions and formed the villages of Kamali, Babaka, Kalo, Keapara, Palawai Bulaa, and Waikunina. The dog's son resided at Keapara. Some time afterwards, feeling the approach of death, he called together all his relations and gave them strict injunctions that on the death of anyone who had come from the bowels of the earth, his remains and all utensils belonging to him should be placed at the mouth of the cave at Alivele. In obedience to his commands this was done, and their skulls and bones may be seen there at the present day.

The mountain of Alivele lies near Hood Hill.

I will commence my account of the natives at the birth of the child, and will follow his career till death.

At the birth of a child, the nearest female relative of the mother acts as midwife; the inlying woman is seated in a squatting position, holding to a rope suspended from the ceiling. The principal attendant is seated immediately behind her and clasps her tightly round the waist, and in this position the child is born. Should the labour be protracted, the husband is called. He seats himself beneath the house (built on poles) and undoes his perineal band (*ivi*). This is supposed to be an infallible remedy. A woman expert is sometimes summoned in cases of difficult parturition, who makes passes over the sufferer, muttering a jargon meanwhile. Should the child when born show signs of lethargy, the sinkers on a fishing net are shaken over its head.

Immediately the child is born the navel string is severed, and it is washed and returned to its mother. The child is allowed to take nourishment from its mother as long as it will. I have known children of three and four years of age still being suckled.

No cohabitation can take place between man and wife until the child can walk.

The naming of a child is the first act of importance in its existence. It is generally named after some relation. It very often happens, however, that before its birth, a friend of the mother will ask and obtain the privilege of naming it. It will then be named in such a way as to commemorate some notable deed or act of its godfather, such as Laka-Kwaipo=I went to Kwaipo (a much dreaded village); Nabu Laani=I swam for ever; Vagi-Kama=I killed Kama. Its name is sometimes decided by any particular characteristic the child may have, as—Kopina-Kulo, a white skin; Gima-Rakava, a beautiful hand; Vavine Kamu, a big woman.

When the next child is born, some female relative takes charge of the first-born, and acts towards it in every way as its mother.

The ears of all children are pierced in several places around the edge at a very early age.

The next act of importance is the tattooing of the child. A boy is never tattooed until he has taken a life or assisted to do so (I shall treat of this in description of Warfare). A girl is tattooed on the face at an early age. When about eight years old the remaining portions dedicated to this, are treated, with the exception of the particular tattoo placed on the chest, which has its apex between the breasts, and the tattooing on the front and lower part of the body. The former is done when the girl's breasts are commencing to form, and the latter when she enters the list of marriageable women. A woman without the latter tattooing has no attraction whatever in the eyes of the young men.

I shall give a description of the ceremony attendant on the entry of girls into marriage under the heading of Feasts.

The initiation of boys to manhood takes place when they are ten or twelve years old. Up to that age they wear no covering of any sort. On a day appointed by the father, the boy is washed, besmeared with cocoanut oil and a bran new *ivi*, or perineal band, placed on him. All the family jewellery is requisitioned to adorn him, and his chest is literally covered by boars' tusks, shell armlets, etc. He is allowed to eat no boiled food for ten days; but may stave off starvation by roasting a single banana now and then. He may only eat the centre, throwing away the extremities. It is most amusing to observe the sense of importance that the donning of this *toga virilis* confers on the boy. The day before you will see him playing about under the houses with his friends, throwing miniature spears at cocoanut fronds, and otherwise exercising himself in boyish games, and regarding all girls with contempt. Once the *ivi* is fastened on, however, his whole demeanour changes. He stalks round with such an important and haughty air, looking neither to the right nor left, that it is most ludicrous. He joins in no more boyish games; but may be seen gravely talking with the elders of the tribe on the prospects of the crops, the expected advent of dugong and other deep-water fish; or the chances of war with neighbouring villages.

Courtship.—An unmarried woman can be easily distinguished from a married woman by her hair being long, by wearing ornaments, and by the make and shape of her *rami* or petticoat, the only covering she wears.

A girl may wear as many under-petticoats as she pleases. These are called *nikeve*, and are made by splitting the leaf of a broad-leaved plant into thin strips. They are beautifully soft and supple, and I have many times when camped on the hard floor of inland houses, used two or three as a mattress. Over these is woven the ordinary *rami*, an uncoloured petticoat made of grass, but covered at intervals of an inch by white broad ribbons of the broad-leaved plant.

The dress for feasts and ceremonies is a much more elaborated affair, and is composed entirely of broad leaves of the same plant, with alternate ones dyed a deep red. It reaches from the waist just above the knee. The right side of the petticoat is left open with a view of exposing the tattooing of the right buttock and thigh. The breadth of the open space is only regulated by the work of the owner. Quiet modest girls are content with one of 3 or 4 inches, while girls of flighty disposition affect an exhibition only just stopping short of positive indecency.

Their ornaments are the *alo* or pearl-shell worn round the neck, and fashioned in the shape of a crescent; arm-shells (*raula*), made from the base of a conical sea-shell.

At time of the *Kapa* or annual feast, the hair on the upper forehead is shaved, and sea-shells of a bright red colour are attached to the uncut locks immediately above the shaven portion.

The dress of the young man consists of his perineal band only. His ornaments are boars' tusks and pearl shells, with head-dress of parrots' and cockatoos' plumes. (This, however, I shall describe later on.)

A boy and a girl are often betrothed at a very early age, by their parents, and the father of the boy works for the father of the girl with a view to the payment of the marriage dowry. He always presents him with a share of any fish or game he may take, gives him assistance in building his house, turning up the ground for his plantation, and in many other ways. When the couple arrive at marriageable age, the girl is handed over to the boy and the remaining payment made.

It is very rarely, however, that early betrothed marriage comes to anything. It usually happens that the girl finds she likes some other boy better than the husband chosen for her—or *vice versâ*.

She has her remedy. The day before the marriage ceremony she disappears into the bush with the man of her choice, where she remains with him all night. They return to the village in the morning, and according to their laws are man and wife. The disappointed suitor arms himself and his relations, performs a war dance in front of his successful rival's house, and loads him with all the curses he can remember or invent. As, however, this proceeding is mainly in the form of a ceremony to appease his wounded honour, not much notice is taken of it, and he betakes him to his house again. Sometimes, however, it does not end so peacefully. I have seen half-a-dozen men wounded in an affair of this sort.

The method of courtship is somewhat singular, the girl invariably taking the initiative. When a boy admires a girl, he will not look at her, speak to her, or go near her. He, however, shows his love by athletic bounds, posing, and pursuit, and by the spearing of imaginary enemies, etc., before her, to attract her attention. If the girl reciprocates his love, she will employ a small girl to give to him an *ugauga gauna*, or love invitation, consisting of an areca nut, whose skin has been marked with different designs, significant of her wish to *ugauga*. After dark he is apprised of the place where the girl awaits him; repairing thither, he seats himself beside her and as close as possible, and they mutually share in the consumption of the betel nut. This lasts about half-an-hour. Should the girl favour his suit, she will signify to him that the door of her house will not be closed against him should he wish to visit her.

It is understood by the parents of the boy and girl that the consumption of betel nut by the couple is tantamount to their betrothal, and they do not interfere with the visits of the boy to the girl's house, where he usually sleeps. The mother of the girl, when she thinks that the state of affairs has continued long enough, arises in the middle of the night, prepares a dish of food, generally banana and sago pudding. Waking up the betrothed couple she places before them the food. They eat it, and by the laws of the land are then man and wife. The marriage dowry is not handed over at once, but never later than a few months after they have become man and wife. The father of the boy in the meantime visits all his friends and solicits aid from them to pay the dowry (this is called *nogi-nogi*). One will give him a spear, another an arm-shell, etc. The usual price of a bride is six spears, six or eight arm-shells, two boars' tusks, a few shell necklaces, and two or three perineal bands.

The day after the marriage, the girl doffs all her ornaments, such as ear-rings, pearl shell, etc., but is allowed to retain her dancing dress, which marks her as a bride for a week or so. At the expiration of this term, her girl's dress is replaced by a married woman's petticoat, which reaches below the knees, and has no opening on the right side. It is made of grass and has no ornamentation in the shape of coloured or broad stripes. Her head is now closely shaven with a piece of obsidian or glass bottle, and she is ever afterwards compelled to keep it so. On the centre of the naked cranium a small tattoo mark, about an inch long, is placed. She can no longer join in the dances, but belongs to the ranks of the onlookers, and generally arrogates to herself the *rôle* of adviser to the girls on dancing matters.

If a woman has cause of grievance against her husband, or finds that he is distasteful to her, she leaves him and returns to her mother's house. She is now a *kapani*, or divorced woman, and her husband has no further control over her. It is very easy to distinguish these women by their bold look, unabashed demeanour, also by the profusion of sweet-smelling plants that they wear in their ears and armlets. They are not permitted to join their husbands again, but in everything else are allowed as much liberty as a single girl.

A man has an equal privilege with a woman as regards divorce. If he disapproves of any of her actions he will probably hit her over the head with a paddle and tell her to make herself scarce.

A divorced woman invariably marries again in a few months. On the news of her approaching marriage, the former husband arms himself and parades in front of his rival's house, challenging him to mortal combat. This is, however, make-believe, as he has really no wish to fight, but desires to impress his rival with the desirability of paying a good price for his wife.

Death.—On the approach of death the house of the sick man is filled by anxious relatives and friends, who sit around and watch the end. His death is a signal for a tremendous burst of grief from all present, the men beating their faces with the closed hand, and the women tearing the sides of their faces with their finger nails until the blood pours down. The friends of the deceased bring presents of food, which they place before the corpse. This is not meant as food for the dead man's spirit, but as an act to appease the wrath of his relatives. As decomposition sets in very quickly in the hot humid atmosphere of the plains, a suitable spot is selected and the grave dug about 5 feet in depth. In the inland villages, immediately in the vicinity of the house is a favourite position, or beneath the family *dubu*, a platform in a public spot in the midst of the family land. The coast tribes, whose houses are built on piles in the water, sometimes bury in the bush or place the corpse in a canoe and anchor it off the village while the husband or wife, as the case may be, remains in close attendance. There are certain ceremonies connected with this that are too repulsive for publication. When the corpse has become dry, it is placed on a platform in a tree, and after a lapse of time the bones are collected, cleaned, and tied in a bundle. This is placed in the roof of the house.

I will now return to a description of a burial by inland people.

The corpse is placed in the grave, which is lined with mats, and a temporary shed reared over all. Beneath this the widow (or widower), sits and watches the corpse. Food is supplied to her by relatives. This seclusion lasts two or three months, and the widow employs herself during this time in fashioning widow's weeds, which consist of a long grass petticoat reaching to the ankles. At sundown, on the day of the burial, an interesting ceremony takes place. Some old woman, or man, who has the power of sight-seeing, is summoned. She seats herself at the foot of the grave and peers into the darkening shadows beneath the cocoa-nut palms. She remains perfectly still in this position, all the relatives of the deceased regarding her with the deepest anxiety. Presently her looks become more intense, and lowering her head, but still gazing into the depths of the forest, she says in low and solemn tones, "I see coming hither the spirit of Kalo Kava's (dead man's name) *tupuku* (grandfather). He says he is glad to welcome his grandson to his abode. I see now his father and his own little son also, who died in infancy."

She gradually becomes more excited, swaying her body from side to side, and

waving her arms. "Now they come," she says, "I can see all our forefathers in a fast-gathering crowd; they are coming closer and yet closer. Make room, make room for the spirits of our departed ancestors."

By this time she has worked herself into a frenzy; she throws herself on the ground, beating her head with her closed fist. The foam flies from her lips, her eyes become fixed, and she rolls over insensible. She is soon resuscitated, however.

A widower's costume consists of an elaborate head-dress, made of shells. He has armlets of the same make, and a very graceful loin fringe, which depends from the waist to half way to the knee. His hair is cut off and he blackens his whole skin. His dead wife's petticoat is fashioned by sewing it into a square shape, about 8 inches in depth. On it are tied any ornaments she may have possessed, and a string attached to it, which is worn round the man's neck. The petticoat depends beneath his right arm.

A widow shaves her head the same as a widower. She also wears a similar head-dress, but on a much larger scale. Her petticoat, as I have before mentioned, is made of grass and reaches to her feet. She generally wears a second one over her shoulders. She wears her husband's perineal band round her neck, with his lower jaw-bone attached. Her body is blackened.

Some of the inland tribes have a peculiar way of disposing of a corpse. A double platform 10 feet high is erected in the vicinity of the village. On the upper platform the body of the dead person is placed; on the lower one, immediately beneath the corpse, the husband (or wife) sleeps, allowing the decomposing juices of the dead relative to fall on him. The mourner has to walk solemnly through the village each day, and shows his affection for his wife by never washing himself.

One peculiar ceremony in connection with the death of inland people is the stripping-off of the epidermis with a view to the discovery of the person who has caused the death. Certain portions of the body are allotted to certain relatives. When decomposition has sufficiently advanced, his epidermis is stripped off by some friend of the deceased. Should it fail to come off on some part of the body, the relative to whom that part is allotted has been the cause of the death. The portions are thus allotted:—To the mother, the inside of the thighs, because she has carried him as a child, straddle legs; the nose, because she has cleared it when the child has a cold, by sucking it. To the father, the forehead, because on that part he wears his head-dress of plumes; the chest, because on that part he wears his ornaments of pearl shell and boars' tusks. To the grandmother, the buttock and back, as she has nursed the child. To his eldest brother, the feet and legs. To his aunt, the belly and navel, as she assisted at his birth.

I shall treat further of this under Religion.

The name of a dead person is never tabooed as is the custom of many savage tribes; indeed, every opportunity is seized to repeat the name. Thus, for instance,

a dead man's relations all adopt his name, prefixed by a title denoting the relationship.

For instance:—

Corpse's name	... ...	*Aluveliki.*
,, father	... .	*Maru-aluveliki.*
,, mother	... ...	*Ari-aluveliki.*
,. brother	... ...	*Koa-aluveliki.*
.. sister	. . ..	*Rapu-aluveliki.*
,, wife	... ...	*Wapu-aluveliki.*
., husband	... ...	*Roai-aluveliki.*
,, son	... ...	*Muni-aluveliki.*
,, daughter	... ...	*Muni-aluveliki.*

Laws of Inheritance.—No woman can own any land. I may preface my remarks on this paragraph by stating that there is no part or portion of the lands of a tribe without an owner. Each family land is clearly known and defined by permanent landmarks, such as trees, swamps, small hills, etc. The male head of the family is the sole owner of the whole land belonging to his family, and he partitions the land to the different members of it, at the commencement of each annual planting season. Should he die, his eldest son, if of mature age, fills his place. Should he be considered too young and inexperienced, his place is assumed by an uncle until such time as he shall be old enough to act for himself.

This law also holds good in the succession to chieftainship, an uncle acting for the child chief, though he is obliged to give all orders in his name. At the division of produce at a feast, the uncle calls out the name of each recipient of a present, and the young chief hands it to him.

Warfare.—War may be caused in many ways; but the most common cause is an act of vendetta. I will enumerate an instance or two of another common cause of war. A man returning from hunting or fishing is disappointed at his empty game-bag, or canoe, and turns over in his mind how to discover who would be likely to have bewitched his nets. He perhaps raises his eyes and sees a member of a neighbouring friendly village on his way to pay a visit. It at once occurs to him that this man is the sorcerer, and watching his opportunity, he suddenly attacks him and kills him. This man's life has the value of another man's life, and unless full compensation in the shape of boars' tusks, shell armlets, etc., is given, his friends take the first opportunity of squaring the account by killing a man, or as many more as they can. Thus a vendetta is established that lasts years and years, until one day it strikes some chief that it is time this state of affairs is ended, and he sends a message to his enemies by a friendly native, suggesting a squaring up. A place is appointed; the number of lives taken on each side is estimated, and the value of the balance of lives taken by the stronger tribe paid for.

Women are a very fruitful cause of war. They visit inland tribes for the purpose of bartering fish for vegetables, and are very keen dealers. Disputes are

always arising, and one of the disputants, enraged beyond control, runs off and tells her husband and brothers that she has been insulted and robbed. She is not particular about colouring her story, and the men seizing their spears, rush to the spot and kill as many women as they can.

It sometimes happens that one tribe will challenge another, and a place of meeting is arranged. The hostile tribes arrange themselves in two lines facing one another, with an interval of about 100 yards between them. A man slips out from one line and abuses the other side. He is soon confronted by an opponent equally versed in the science of vituperation, and the amount of bad language used would satisfy an Australian bullock-driver. They gradually become more excited, until finally they dash at one another and a spear or two is thrown; other warriors now rush out from either side and the battle commences. It is, however, of but short duration, as a man or two wounded on one side is considered sufficient excuse for that side to run away. The spears in use are 10 feet long, and so heavy that it is impossible to use them with effect over 20 yards. They use shields which cover all the body. Stone clubs are used; but only in pursuit of a flying foe, or to despatch a wounded man. Should a woman throw her petticoat over a wounded man, he is safe from further molestation.

No quarter is ever given.

Certain distinctions in the wearing of ornaments are allowed to warriors who have taken life. They are these:—

The *Igo.*—The centre small rib of the cocoanut frond, to which small white feathers are attached at intervals.

„ *Wagula.*—A strip of cuscus skin worn across the forehead.

„ *Kalai.*—White cockatoo's plumes worn in the hair.

„ *Tepe.*—A very pretty ornament of small white shells, worn as a forehead band.

„ *Luibobo.*—A pendant of small beads worn in the ears.

„ *Babaka.*—Scarlet croton leaf.

„ *Kaima.*—The base of a small conical white shell, worn as a pendant from the nose.

„ *Rogena or Muravaputi.*—Certain tattooing on the back of legs and chest. It is also worn on the chin by boys whose fathers have taken life.

„ *Muni.*—A cane belt dyed black.

„ *Pina.*—The upper mandible of the horn-bill which is worn on the forehead. This is a special distinction and equal in value to our V.C. Only men who have slain an enemy in single combat can wear it.

„ *Kapa.*—A long ribbon of soft white bark dependent from the back of the head.

„ *Tiake.*—The plumes of the Raggiana worn as a head-dress.

Custom of Purification after taking life.—A man who has taken life is considered to be impure until he has undergone certain ceremonies: as soon as possible after the deed he cleanses himself and his weapon. This satisfactorily

accomplished, he repairs to his village and seats himself on the logs of sacrificial staging. No one approaches him or takes any notice whatever of him. A house is prepared for him which is put in charge of two or three small boys as servants. He may eat only toasted bananas, and only the centre portion of them—the ends being thrown away.

On the third day of his seclusion a small feast is prepared by his friends, who also fashion some new perineal bands for him. This is called *ivi poro*. The next day the man dons all his best ornaments and badges for taking life, and sallies forth fully armed and parades the village. The next day a hunt is organised, and a kangaroo selected from the game captured. It is cut open and the spleen and liver rubbed over the back of the man. He then walks solemnly down to the nearest water, and standing straddle legs in it washes himself.

All young untried warriors swim between his legs. This is supposed to impart his courage and strength to them. The following day, at early dawn, he dashes out of his house, fully armed, and calls aloud the name of his victim. Having satisfied himself that he has thoroughly scared the ghost of the dead man, he returns to his house.

The beating of flooring boards and the lighting of fires is also a certain method of scaring the ghost. A day later his purification is finished. He can then enter his wife's house.

Feasts.—The most important feast is the annual *kapa*. It is during the celebration of this that marriages usually take place. Certain produce is cultivated for three months previous. This ensures a bountiful supply of bananas, yams, etc., for display at the feast, and for distribution to visitors afterwards. Each visitor is allowed to bring as many baskets as he pleases, and it is considered to be a great disgrace if the givers of the feast have not sufficient food to fill them.

Three months previous to the *kapa*, a small feast is given called *Wagi keb*, at which no ornaments are worn; nor is singing during dancing allowed, though drums are beaten. It is at the expiration of this feast that the taboo on produce is imposed.

It would be perhaps as well here to describe the dress of the dancers. No one is debarred from participating in the dance; but though married women and widows and divorced women are not forbidden, they would have to endure much ridicule should they do so.

The head-dress of an unmarried woman is a most elaborate affair, and all the family jewels are borrowed to make it as showy and costly as possible. The upper part of the forehead is shaved to the depth of 2 or 3 inches. To the hair immediately above it are attached round flat red shells by a hole bored through the centre. The shells are very valuable. They are mixed at intervals with small conical white shells.

At the time of dancing, a head-dress, which entirely surrounds the head, is worn above the shells. It is made of the feathers of a red parrot. These feathers are much esteemed if they are yellow. As they have no means of dyeing, they

keep the parrot in captivity for three or four years, meanwhile feeding him on a yellow root. This in time changes the red feathers of the tail to yellow.

Round the neck of the girl and resting on her breast are placed boar's tusks, shell armlets and shell necklaces. Her dancing petticoat (*kuli*) is an elaborate affair of broad stripes of scarlet and white soft bark. It is made from the leaf of a small plant similar to a prickly pear.

The dress of the men consists of the yellow perineal band. They wear all their rewards for taking life, as well as pearl shell crescents, boar's tusks, etc. Between the knee and the calf, leglets of white bark are worn.

The head-dresses of paradise plumes are very imposing; these are attached to a thin piece of tortoise-shell which is weighted at the extremity and sways in unison with the motion of the head in the dance.

For a month or so previous to the *kapa* the natives busy themselves in erecting *tapus*, *i.e.*, scaffolding on which to hang the produce, and in bringing this in and suspending it on the *tapu*. These *tapus* are erected in the centre street of the village, generally immediately opposite the houses of the chief or of influential men. Dancing goes on every night during this work.

The feast lasts two days.

The members of each family which possesses young daughters, freely produce their family jewellery to adorn her, and much emulation is shown in this respect.

It is at this feast that the initiation of girls to womanhood takes place. The family of each girl who takes part in the ceremony has to supply a pig for the public.

On the first day of the feast the custom of *iropi* takes place. The girls are all freshly tattooed on the back and buttocks. A particular petticoat, which exposes the whole of the buttocks and back of the legs, is worn for the occasion. To the centre of the string which supports the petticoat, and immediately at the centre of the small of the back is attached a string about 3 feet long, with an old knitted bag on the end as a weight. The girls form up in a row, one immediately behind another. Each girl holds the string in her right hand, about 6 inches from the bag. To the slow beat of the drum, she takes one step forward with her right foot, at the same time swinging the bag behind her and over her left shoulder, where she adroitly catches it with her left hand and to another beat of the drum swings it over her right shoulder, recovering it in the right hand, and taking another step forward. This ceremony lasts about ten minutes.

The following day the principal part of the ceremony, called *kuiriga*, takes place, and many hours are spent on the toilet of the girls. They are freshly tattooed on the whole of the front of the body, especial attention being paid to the lower parts, as a girl who is untattooed there, or has but indifferent tattooing, possesses no attraction in the eyes of the young men. They mount the *dubu* (permanent staging for ceremonies) and stand side by side; and on a given signal untie their petticoats and throw them behind them. Married women then

advance and place in front of each girl a basket containing on top a few long yams, and a small knife, and beneath, a quantity of areca nut. The girls quite enjoy their position, and do not show any shame. I have forgotten to mention that on this occasion, only a girl, providing her father has taken life, may wear his paradise plumes, weighted in the manner I have previously described. An old woman now advances and anoints each girl on the breast and the whole of the front of the body with melted pig's fat or cocoanut oil. They are now ready for the concluding ceremony. Two or three married women, or widows, seat themselves behind the girls and beat drums with slow and rhythmical measure. Each takes a yam in her left hand and the knife in her right, and at each beat of the drum cuts off a piece of the yam, bends her knees, and slightly bows her head, causing the weighted head-dress to sway forwards. The whole effect is wonderfully pretty. After each girl has cut up half a dozen yams, she, on the cessation of the beat of the drums, which is announced by two sharp taps, seizes the basket of areca nuts and pelts the crowd. This part of the affair is much appreciated by the onlookers, who scramble or tumble over one another like children.

Very few, if any, men seem to care to look on at the "ceremony," old women, widows, and married women who have daughters, constituting the majority of the bystanders; and it is amusing to hear them passing experienced remarks on the tattooing, and referring to the days when they joined in the *kviriga*. The Government have suppressed this part, insomuch that no girl is allowed to doff her petticoat.

Religion.—There is no belief in a good spirit, though they have any quantity of evil ones. All their dead ancestors are always on the watch to deal out sickness, or death, to anyone who may displease them, and the natives are most particular to do nothing that should raise their ire.

At death, they join their forefathers underground, where they have splendid gardens, houses, etc. They believe that a famine underground always precedes one above.

Sorcery.—There are two species of evil working magicians or sorcerers—the *palagu*, or spirit of a dead relation, and the *wara*, a living man or woman who has the power of causing death by incantations, or by means which I shall now describe.

I must preface my remarks here by stating that in their belief no one dies a natural death. Some *palagu* or *wara* has accomplished it. The living *wara's* usual procedure is (supposed to be) this. He wanders at night through the garden and plantations of a neighbouring village until he finds some villager asleep in his garden house, or in the bush. He draws his bamboo knife, cuts off his head, and disembowels him. He then replaces the head in its natural position on the shoulders, and rearranges the other wound. Having anointed the edges of the wounds with a particular ointment (the composition of which is unknown) which has the effect of completely obliterating all trace of mutilation, he leaves the man sleeping. Before departing he rubs a small portion of another ointment on the

instep of his victim, which has the peculiar property of attracting venomous snakes, causing them to bite the part anointed. The man wakes in the morning and goes about his daily duties, feeling no hurt.

It happens that one day, sooner or later, he is bitten by a snake and dies. After the death the relatives assemble and examine the body for marks of the *ward's* work.

In death from snake bite there is much *post mortem* discoloration, and one man pointing to a mark on his neck will say, "Look! here is where his head was cut off"; or, "Here is where he was speared"; or, "Here is where he was disembowelled."

Hunting and Fishing.—The game of New Guinea consists of pigs, kangaroo, wallaby, kangaroo rats, snakes, etc.

Hunting is, of course, not confined to the inland tribes.

About September, when the country is getting thoroughly dried up, a day is appointed for the annual burning of the grass, *lege kapua*.

Any neighbouring villages supply contingents to swell the ranks of the hunters. A spacious expanse of grass, with heavy scrub in its vicinity, is chosen as the scene of operations.

Nets 3 feet high, supported on light wands, are arranged along the edge of the scrub, some of the men concealing themselves at intervals behind the nets. The grass is lighted simultaneously at different points, until a long line of flame is formed, which gradually approaches the line of nets, driving the game before it. The nets, on the kangaroos striking them, collapse, entangling them, in which state they are speared. Each man carries a small hand-net attached to an oval framework of cane, with which he captures young kangaroos, paddymelons, and such like small cattle. He is also provided with a similar net, which is made much stronger, the meshes being drawn taut across the framework.

This is to withstand the charge of a pig. The man, as the pig charges, drops on his knee, and holding the net by the framework in both hands, pushes it fair and square over the pig's snout, in which position any man can hold the biggest pig. No man may carry, or partake of, any kangaroo that he has killed. He generally exchanges it with another man similarly situated.

They have many charms to ensure a lucky day. These are attached to their nets. The charm most prized is the *poli*, or stone found in the crop of the *goura*, pigeon. This charm is also much in use as a remedy for sterility in women.

Turmeric and ginger, spread on spots which are frequented by kangaroos in the heat of the day, is supposed to partially paralyse any animal smelling it.

The natives' wives and sweethearts accompany them, carrying food, etc., for the exhausted men.

Fishing.—Confined entirely to coast tribes. The village of Bulaa, near which I reside, is the greatest fishing village in New Guinea.

They own but little land and do not understand agriculture.

They are consequently obliged to be fishing night and day to obtain fish to barter with the inland people for vegetables.

They have a variety of nets, from the huge *walu*—a mile long—to the little *ligi*, or shore net, manipulated by two men.

There are a great variety of fish to be found among the coral reefs fringing the shore, and on the main barrier reefs, two or three miles distant from the land.

The preparation for dugong and turtle fishing are most elaborate, and commence two months before the fishing is started. A headman is appointed, who becomes *belaga*—holy. On his strict observance of the laws of the dugong net depends the success of the season. He lives entirely secluded from his family and is only allowed to eat a roasted banana or two after the sun has gone down. Each evening at sundown he goes ashore and bathes on the point of land overlooking the dugong feeding-ground. Having taken off all his ornaments, which, with this exception, he is never allowed to doff, he walks solemnly into the water and dips his head three times, meanwhile throwing into the sea some *mula-mula*, *i.e.*, medicine to charm the dugong. It is composed of scraped cocoanut, some bruised sweet-smelling herbs and scented gums. He then anoints himself from head to foot with cocoanut oil and returns home. While he is undergoing these privations all the able-bodied men of the village are employed in collecting the bark of a certain tree, and beating and washing it until they obtain a very strong fibre, which they twist into rope and fashion into the net. These nets are often a mile long, and five fathoms deep.

It is only at night that they fish for dugong. The first evening they leave a feast is given of which only the fishers partake. The nets are carried on a very large double canoe (*kebo*), which is accompanied by many small canoes. The *belaga* man directs operations, and knows well the deep-water channel by which the dugong escape to the open sea when disturbed. Here he lowers his net, the small canoes seeking the shallower waters in the bottom of the bay, with a view to driving the dugong towards the net. Perfect silence is observed on the small canoes, until the snort of a dugong rising to breathe is heard between them and the deep channel where the net is laid. The occupants of the small canoes then beat the sides of their craft with their paddles, which causes the dugong to dash headlong for the opening. When they strike the net, the men who are stationed at intervals along it undo their *ivi* (perineal string), which, on this occasion, is made from a similar rope as the net, and diving down, make fast one end round the dugong's tail and the other end to the net. In this position it is soon drowned. At early dawn the catch is poled slowly to the village, the women lining the verandahs, swaying their bodies and singing their *lumis*. The nets are first placed on the scaffolding above the sacred platform, and the dugong or turtle are laid beneath. The *belaga* man then distributes them among his friends, first observing the sacred custom of making a small incision in the belly.

Conclusion.—In conclusion I would remark that, from what I have said, you all must have judged that the Papuan is a being with the form of a man, but

possessing the mind of a little child. It is so. His bursts of violent passions, caused by the most trivial incident; his continued sulkiness at times, and his rapid recovery from overwhelming grief to extreme hilarity, all point to a childish mind. He is, however, intelligent, and is an apt pupil, and I foretell that the Papuan will be quite capable of competing with (say) the Maori or the African negro. His physique is of the best; his powers of endurance are simply wonderful, and, strange to say, he has a most musical ear. He is kind and most hospitable, and his code of morals—though they might be condemned by civilisation—are not without many traits of honour and justice.

ORDINARY MEETING.

NOVEMBER 22ND, 1898.

F. W. RUDLER, Esq., F.G.S., *President, in the Chair.*

The Minutes of the last Meeting were read and signed.

The PRESIDENT, after some introductory remarks, called upon Mr. William Crooke to read his paper on "The Hill Tribes of the Central Indian Hills, their Ethnology, Customs, and Sociology." This was well illustrated with lantern slides.

Discussion was carried on by Mr. KENNEDY, Mr. GOWLAND, Mr. GOMME and Mr. IRVINE, and Mr. CROOKE replied.

A cordial vote of thanks was passed to the author of the paper, and also to Dr. Garson for exhibiting the lantern slides.

THE HILL TRIBES OF THE CENTRAL INDIAN HILLS.

By Wm. Crooke, Esq., B.A.

I venture to address you this evening on the subject of a race about which the ordinary Englishman has as yet attained only an imperfect knowledge. Most of us learn what we know of distant races when attention is called to them by war, by some great disaster, by the travels of some bold explorer. But these jungle-folk whom we have to consider to-day have hardly ever resisted the British arms; their country has been so little explored by scientific travellers that about a century ago when it first came under our rule it was a *terra incognita*, peopled by races of whom wild tales were told, like those which delighted the ancient and mediæval world—tales of cannibalism, of men who covered themselves with their ears as they slept, and other common-places of folk-lore. Of Central India the first real account was that prepared by Sir Richard Temple soon after the Mutiny. Since then every corner of these hills and jungles has been explored by a succession of English officers, and a large amount of valuable information has been obtained about these races, much of which lies forgotten in mouldering libraries or in musty blue-books.

But it is only within our own day that more attention from the point of view of ethnology has been directed to these people. This is the result of that wider interest felt in regard to anthropological studies, which is one of the leading characteristics of the science of our generation. It was seen that we had here within easy reach of European observers a congeries of races the investigation of which was likely to furnish much information to the students of the new science. They had lived for countless ages in a state of comparative isolation; it was clear that their origin and distribution suggested a most interesting series of ethnological problems; and while in the recent past Brâhmanism, that most active of missionary faiths, had largely influenced their beliefs, it came to be admitted that these so-called indigenous religions had in the early past profoundly affected Brâhmanism. It was obvious, too, that if their social polity and creeds deserved enquiry, no time should be wasted. As the newspaper and Board School are playing havoc with our native folk-lore, so the Hindu missionary, the ascetic, like the Jogi and Sannyâsi, were gradually bringing them within the Brâhmanic fold, and it was certain that before long much that was interesting and characteristic would be utterly lost. It was also generally admitted that the accounts of the early observers left much to be desired in wideness and precision. The modern

student of ethnology requires much more detail in the investigation of custom, ritual and folk-lore than his predecessors.

Hence came the plan of a systematic Ethnographical Survey of Northern India, which was designed to provide a detailed enquiry, based in the main on anthropometry, into the relations of the existing races to each other; and, secondly, a minute exploration of their customs of birth, marriage and death rites, social organisation, religion and folk-lore was proposed. This was carried out first for the great Province of Bengal by Mr. H. H. Risley; it was next undertaken and completed by myself for the North-Western Provinces, and the work is now in progress in the Panjâb and Behâr.

It is mainly the general results of this survey that I venture to lay before you as affecting the jungle tribes and their kindred in the lower settled country. For the people occupying Bengal we have the researches of Colonel E. T. Dalton and Mr. Risley. In the North-Western Provinces I was fortunate enough to hold for five years the post of magistrate of the immense district of Mirzapur, the last refuge in that part of the country of many interesting tribes. Marching through their forests year after year, living amongst them for months at a time quite isolated from other Europeans, continually joining them in the search for big game, a European who observes them with interest and sympathy can hardly help gaining some useful knowledge. But unhappily the Indian official has little spare time to devote to pure ethnology. The cares and responsibility of a district containing a million and a quarter of souls ever press heavily upon him. Hence come the inevitable incompleteness and shortcomings in his ethnological work, which is, as it were, only one chapter in the round of his official life.

Before we can discuss the Central Indian hillman in any detail we must try and form some general idea of his environment. A night or so in the train conveys the new-comer to Indian soil from the sea border which Bombay guards up the slope called in vernacular parlance the Ghâts or steps, the low hills which form the western bastion of the Central Indian plateau. Then begins what is known in various parts of its length as the Sâtpura, Kaimûr or Vindhyan range, which may be called the backbone of the Peninsula. To the north of it lie the alluvial valleys of the great Indian rivers—the Panjâb and Sindh, the basin of the Indus and its tributaries, the deserts of Râjputâna, the North-Western Provinces and Oudh, the valleys of the Ganges-Jumna river systems. In wealth, political and strategical importance, in historic interest, this is much the most important portion of the Empire. South of the central range of hills comes the plateau of the Deccan or Southern land, and thence down to Cape Comorin lie what are known as the Presidencies of Bombay and Madras, the dominions of the Nizâm of Haidarâbâd and the kingdom of Mysore.

This range of hills, then, runs almost continuously from west to east for a distance of some eight hundred miles. The highest peaks of the range are little more than 4,000 feet high, not more than our Ben Nevis; but nowhere are they arranged on any well-defined system. Here the scarp is high and well-marked

there it slopes gently to the plain below: parts of it are quite unculturable, miles of rock and boulder covered in places with very scanty vegetation; here and there are little fertile valleys, small pockets of verdure amidst the cliffs and jungle. Nowhere is the jungle really heavy in the sense of our popular conception of a tropical forest, like that, for instance, along the course of the Amazon, where the giant trees close in at the summit and exclude air and light, vast masses of tangled creepers, wastes of malarious greenery. But none of these will you find in the jungle with whose folk I am trying to make you acquainted. Here the jungle consists of low scrubby thickets of trees usually armed with most insinuating thorns: whatever heavy timber ever grew on this arid soil has long ago fallen beneath the woodman's axe or has been destroyed by constant forest fires. In fact, the soil is too poor, the moisture too deficient except for the three months of the annual rains, the sun's heat too fierce to permit the growth of any luxurious vegetation. Hence we naturally find a notable absence of animal life. The popular conception of a real jungle is a place where you can turn out a tiger, a buffalo or a stag at every acre, or may tread upon a cobra at every step. But here this is not so. A tiger in a country like this needs a range of some forty square miles to supply himself with food, and the deer and the wild pig live only where there is a tolerably permanent supply of water. It is in truth a dreary land, at one time baked like a brick by a relentless sun, at another soaked by almost constant rain, at a third reeking with malaria as the heat draws the surplus moisture from the soil. Agriculture, again, is restricted by the small available area. The thin coating of loam on the hill sides will not admit of constant cultivation; so another plan is invented—a patch of jungle is cut down, the stumps remain in the ground, but the leaves and branches are collected and burnt. The ashes are roughly scattered over the surface, which is broken up by the national tool, the digging stick. This is merely a branch of a tree with the end armed with a spike, a distinctively savage implement from which by a regular series of evolution sprang our modern plough. When the field is supposed to be ready, the seed of the rice or millet is scattered over it, more abundantly at the top of the slope so that it may be washed down towards the bottom by the coming rains.

But when the crop is sown the troubles of the husbandman are only beginning. He is beset on all sides by Nature's beggarmen—the deer, the wild pig, the green parrot, the grasshopper. So he has to gird in his patch with a dense mass of thorns, like what our troops in the Soudan call a zeriba, and he has to sit up at night and fire his old matchlock now and then to scare the beasts. At dawn when he goes home to eat and rest he is replaced by his wife or little boy, who sits all day on a platform and flings stones out of a sling at the parrots. Needless to say, he has no means of watering his crop, and if the rains fail he gets nothing.

The natural consequence is that he would starve one year in every five or six if he possessed no other resources; and his only feeding ground is the jungle. In

the first place, it gives him some animal food, but not much. Game is far from plentiful, and most animals are, from his point of view, shamefully wide-awake. His weapons, the bow and his old rusty matchlock, are wretchedly ineffective, and he wounds many a beast which he does not bag. His needs make him the very antithesis of what we call a good sportsman. He will sit over a water-hole and kill, if he can, any beast that comes to drink: stag or hind or fawn are all the same to him. He will lay snares or dig pits round his field with stakes or nooses cunningly arranged, and leave a tempting hole in the thorn palisade through which the poor creature creeps to his death.

But besides this he has sources of food in the myriad fruits, berries, and nuts which the jungle provides. Any of us let loose in such a place with a pointed stick as our only tool would perish straight off of starvation. But the jungleman knows what to dig for, and feeding stuff of some kind or other he can nearly always find. Or if he chance on something poisonous or unwholesome he knows how to scrape and soak it so that its dangerous properties are removed. When a Korwa young lady is married her papa in the fine broad style of the jungle-dweller points to a hillside and says, "Here is your domain," and such rights are acknowledged, as with us a crossing or a tramp's beat becomes a property.

But let no one delude himself into the belief that there is much charm about such a way of life. To those of us who are satisfied with a little French cookery, an *entrée*, a bird, a savoury, the jungleman's dinner is sure to be most unsatisfactory. He will eat game which he admits to be a little "high," but which we should call carrion, and his roots and fruits are many of them in the nature of the basest hips and haws which a respectable British blackbird would turn up his beak at.

One thing he does acquire by this course of life is a marvellous insight into Nature and her secrets. His eyesight or power of hearing is not, I think, by nature much better than ours, but he will hear or see a tiger creeping down a ravine long before the English sportsman will. Every sound in the forest has a meaning for him—the grunt of the baboon as the tiger comes beneath his tree, the hoarse alarm bark of the stag. From the way the vultures hover in the air he will tell whether the tiger has finished his meal or is still tearing the carcase. Every foot-mark, a displaced pebble, a broken grass stalk will tell him something, what beast has passed there and how long ago. We of late hours and crowded rooms and artificial light look on such powers almost as a miracle; but it is really only the result of the fact that he has thoroughly adapted himself to his environment, and this he must do or starve.

The problems of North Indian ethnology, then, centre round the interrelation of the two stocks popularly known as the Âryan and Dravidian. The ordinary theory which has come to be included even in our school-books tells us that a race known as the Âryas, or nobles, lived somewhere to the north of the peninsula, in what are called the Pamîrs, or somewhere beyond the Hindu Kush, or even in the forests of Lithuania. From this central point, wherever it may have been, there

is said to have occurred in early times a great dispersion. This gave rise to the existing European races as well as those of Persia and India, of whom we ourselves are kinsmen, a sort of distant cousins.

The objections to this theory are that it is in the main based on philology, which though an important ethnological factor, is not a final test of race; and, secondly, that, particularly in Europe, investigations of the barrows, the burial places of the prehistoric races, have shown that a large part of the population still resembles in type the earlier races who lived in those countries, associated with extinct animals like the elephant and cave-bear long before the earliest date which can be assigned to the inroad of the Aryans.

To return to the Dravidians of India, a name derived from the Sanskrit *Dravida*, usually applied to the country known as the Coromandel Coast, stretching from Madras to Cape Comorin, and itself probably of non-Aryan origin, the most probable theory suggests Northern Africa as the earliest seat of prehistoric man, and many indications tend to show that his evolution from the anthropoid apes may have occurred there in the Pliocene age. From this centre of dispersion it is probable that Europe was peopled by the earliest races who were either pre-glacial or inter-glacial, that is to say, occupied the country before the Ice Age or in a break between two advances of the ice crust. Another section of the same race probably passed eastward along the Indo-African continent which was then continuous, the intervening space, which is now the Indian Ocean, being dry land of which fragments are represented by a group of islands or shoals, such as Madagascar, the Amirante, and Seychelles Islands. Survivals of these colonists of the Negrito type possibly occur in the Veddas, a degraded jungle tribe in Ceylon, and in the hairy-faced Todas who are familiar to ethnologists as occupying the Nîligiri plateau in Southern India and practise a remarkable form of fraternal polyandry.

As regards the existing races of Central India, the absence of distinctly woolly hair, which, though it may appear in occasional isolated types, has never been distinctly traced as a general racial characteristic, coupled with their lack of prognathism and brachycephaly, is a difficulty in assuming the prevalence of a distinctly Negrito type in the present population. Before this question can be definitely settled we need much further anthropometric evidence from Eastern Africa to admit of detailed comparison with the Indian races. It is possible that further investigations may modify the current theory as to the Indo-Negrito element. Thus, the Nâgas of the Assam-Burmese frontier usually classed as Mongoloid, have a cast of features which present some analogy to the Negro tribe as will appear from the pictures which I now proceed to show you.

3. Here we have a picture of an Angâmi Nâga, a chieftain who commanded against us in the fighting at Kohima and Khonoma.

5. A Lhota Nâga boy.

6. Lhota Nâgas.

7. Mao Nâgas.

8. Rengma Nâgas.
9. Tablung Nâga woman.
10. Jaypur Nâgas.
18. The Namsingia head-dress.
19. Angâmi Nâgas in festival costume.
21. Angâmi Nâga, interpreter.
24. Kûki women.

But as regards the Dravidian element in the races of Central India, it is now generally admitted that their origin must be sought for elsewhere. "In the Dravidian type," to use Mr. Risley's[1] summary of the anthropometric evidence, "the form of the head usually inclines to be dolichocephalic, but all their other characteristics present a marked contrast to the Âryan. The nose is thick and broad, and the formula expressing its proportionate dimensions is higher than in any known race, except the Negro. The facial angle is comparatively low; the lips are thick, the face wide and fleshy, the features coarse and irregular. The average stature ranges in a long series of tribes from 156·2 to 162·1 centimetres (5 feet $1\frac{1}{2}$ inches to 5 feet $3\frac{3}{4}$ inches); the figure is squat and the limbs sturdy. The colour of the skin varies from very dark brown to a shade closely approaching black." The most distinctive type of Dravidians is found among the Mâlê Pahariyas of the Râjmahal Hills and the Mundas and Orâons of the Chota Nâgpur plateau.

But it would be a mistake to suppose that we have here a single race with uniform physical characteristics. Perhaps it may be easier to make this fact apparent from photographs of some representative groups from the North-Western Provinces which I shall now exhibit.[2]

14, 15. Here you have a group and a single man of the Korwa tribe, perhaps the most primitive race surviving in these provinces. They live in small isolated communities, supporting themselves mostly on jungle fruits and roots, a curiously shy people who have come little into contact with Europeans. In one of their villages which I visited only one old man had ever before seen an Englishman, and that when he was a boy. They are men of a fine vigorous type, but those represented in these pictures range between only 5 feet and 5 feet 5 inches in height.

16. The next group, called Biyârs, are rather more Hinduised than the Korwas; here the higher of the two is only 5 feet $3\frac{1}{2}$ inches high.

17. Next come a pair of Parahiyas or Hillmen, who have, as you will observe, more marked Dravidian characteristics.

18. These are followed by a Gond, hardly a good representative of the more primitive branch of the tribe who live further south in the Central Provinces.

19. Next comes a Panka, a village weaver and serf in the hills.

[1] I, *Intro.*, xxxii.

[2] These pictures are reproduced in Crooke, *Tribes and Castes of the North-Western Provinces*,

20. Following him is a family of Patâris who are the family priests of the Majhwârs, a tribe closely allied to the Gonds.

21. Next comes a Ghasiya, a very good example of an almost pure Dravidian.

22. Next comes a Bhuiyâr, who, as you will observe from the breadth of his nose, is a tolerably pure Dravidian.

23. Following him is a party of Mânjhis or Majhwârs, who are almost pure Gonds. They carry, you will observe, the Mândar or sacred drum of the tribe, the body made of earthenware, and the ends covered with goatskin. It occupies an important part in the religious rites of the tribe.

24. These are followed by a party of Cheros, also fairly pure Dravidians; but here it is necessary to distinguish, because one branch of the tribe has become largely Brâhmanised, while others retain much of their primitive character.

25. Next I show a family of Kols, known in Bengal as Hos or Mundas, from whom a branch of the Dravidian race has been called Kolarian. But recent enquiries have shown that the distinction between the Kolarians and the other Dravidians is merely linguistic and not based on any really physical differentiation.

26, 27. In the next two pictures we have the Agariya, the primitive iron-smelter of the hills. Interesting questions arise as to the origin of this industry, on which I may say something later on. Here you will notice the double goat-skin bellows, which he works with his feet, and the hammer of a form closely approximating to the neolithic type, with which he beats out the charcoal and other impurities from the ingot.

29. Lastly, comes a representative of the Hill Doms, who take many forms, from that of an artizan in the lower Himalaya to a singer, and finally, the most degraded outcast in the Plain country, a worker in bamboo, a houseless wanderer, a thief, a scavenger, whom even to look at is, for a pious Brâhman, a pollution.

I pass on to consider the connexion between these Hill Dravidians and the great servile or agricultural population of the Plains, by which I mean generally the valleys of the Ganges and Jumna, that vast mass of simple, peaceful, orderly people, whose chief fault in our eyes is that they propagate their species without any regard to their resources, and are thus a constant burden upon the country, while in seasons of drought, as in recent famine, they become a source of enormous expense and anxiety to the Administration. What we have now to attempt is to examine how these people are related to the Dravidians of the Hills, and perhaps I cannot introduce this part of the subject of my paper better than by showing you a few typical representatives of them, so that you may be able to form some comparison between the two groups.

1. Here, then, we have, first, a couple of Chamârs, the old man holding up in his hands a pair of ordinary country shoes. The Chamâr is primarily a tanner or currier, as his name implies, and from his association with hides, and particularly that of the sacred ox, he is detested by orthodox Hindus. But besides working

in leather, he also farms, does field work and general village drudgery. English officials are often accused of talking in lakhs. But some idea of the difficulty of dealing with these lower races may be expressed by the fact that of these Chamârs alone we have in the North-Western Provinces nearly six millions, about half as much again as the population of Scotland.

2. Next come representatives of an interesting set of people, the Banjâras, who are wandering carriers of grain, with a curiously distinctive dress, perhaps the most interesting race in the Plains, now being seriously affected from the competition of the railways with their hereditary industry.

3. Following these we have the Banya, the corn-chandler, pawnbroker, money-lender, the Shylock of India, hardly a popular personage to those who get into his books, but a sound capitalist, without whom the Empire would be hard set to pay its way.

4. In the next picture we meet another class, the Fakir or so-called ascetic, the idle, loafing vagabond who wanders about the country begging alms. In the North-Western Provinces there are no less than two millions of these sturdy beggars, nearly half that of the county of London, one in every twenty of the whole population of the Province.

5. With him I give a Vaishnava Fakir, one of that class of ascetics who derive most of their inspiration from the teaching of Buddha, and in particular a very careful regard for all kinds of animal life.

6. Next, as illustrating the so-called Âryan branch of the people we have a group of Brâhmans, the Levites of the Hindu community, primarily priests, but also working as clerks, soldiers, husbandmen, and other occupations regarded as pure.

7. The next picture is intended to show the common dress of the women of the Plains.

8, 9. This is followed by two husbandmen ploughing, one a Jât, one of our finest North Indian races; the other a hillman.

10. In the next picture we have a group of Mahâbrâhmans, the funeral priests of the Hindus, not real Brâhmans of the learned priestly class, but a lower class of officiants drawn from some of the lower races. It is needless to say that their duties cause them to be abhorred and despised.

11. Represents one of the Dravidians of the Plains, a Bind, who is a menial labourer and cultivator.

12. Shows a variety of the Dom race of whom we have already seen an example from the hills. This is one of the sub-caste of Dharkâr, who are partially civilised and live by working in rope and bamboo.

28. Another set of Doms.

13. Lastly, to show quite another type comes a group of Bhotiyas from Tibet, pure Mongolians, perhaps the only Buddhists whom we are likely to meet in the Plains.

We are now in a position to discuss the racial affinities of these Dravidians within and without the Indian Peninsula.

We have seen that the Southern Indian tribes, such as the Todas, possibly represent a fusion of Melanochroid Caucasic and Austral-negro blood at a remote period in a now submerged Indo-Austral region. But, as has been shown, the absence of prognathism and woolly hair forbids us to find in the Dravidians of to-day anything like a strong Negrito element. It has been the habit to regard them as Mongoloid, but Mr. Risley's investigations render this improbable. It seems preferable to regard them as belonging to a second and independent migration from the direction of the original African headquarters, which possibly passed into Asia by a more northerly route than that of the primitive Negrito element, traceable in the Veddahs and Todas. This type varies on the one hand with assimilation to the earlier Negritos: but more particularly by fusion with what we popularly call the Âryan stock.

It must, however, be remembered that the aggregate of tribes popularly known as Âryan has been so grouped mainly on linguistic, not racial character. It has been assumed that there was an original Ur-Âryan tongue from which the Âryan languages were derived by regular descent. But the original home of these Âryans has never been satisfactorily ascertained. Opinion seems now to be inclined to regard these Âryans as not one simple "ethnical stock, but an amalgam of many Caucasic and no doubt some Mongoloid elements, leavened by an original Xanthochroid strain, and endowed with a certain racial uniformity by the immense preponderance of the Caucasic physical character and by the general adoption of Âryan speech, traditions and institutions."[1]

On the fact, then, of the allied origin of the Âryan and Dravidian races, or in the continuous amalgamation of these two strains of blood seems to depend the remarkable fact that, as shown by an examination of the cephalic indices, there is a striking uniformity in the existing races occupying Northern India. The consideration of this question depends on the survey of a vast mass of statistical evidence with which I must not trouble you at present. The results have been summarised by Mr. O'Donnell for Bengal, and by Surgeon Captain Drake-Brockmann for the North-Western Provinces.[2] Thus, generally speaking for the latter, taking four main castes—the Brâhman representing the Âryan, the Kâyasth Medium Âryan, the Chamâr Hinduised Dravidian, the Kol fairly pure Dravidian, the cephalic indices are respectively 73·7, 73·3, 73·9, 73·8. For Bengal Mr. O'Donnell writes:—"It thus appears that the Brâhman is at one end of the scale and the cultivated Kâyasth at the other, whilst at the top of the Behâr list the fisherman, priest, farm-labourer, landlord and cow-herd are in close proximity. In the North-Western Provinces the Kshatriya or Râjput soldier, and the Khatri or Râjput trader stand at opposite extremes—rat-catchers, carpenters, dancing women, cultivators, toddy-drawers, and priests coming in between. No evidence could be more convincing, if anthropometry has any meaning. The Indian races and tribes in the valley of the Ganges from the Afghân frontier to the Bay of Bengal are so

[1] Keane, *Ethnology*, 410.

[2] Crooke, *Tribes and Castes of the North-Western Provinces and Oudh*, i, *Intro.*, xxx *seqq.*

absolutely intermingled in blood, that it is impossible to discriminate between the skull characteristics of the castes or functional guilds which have grown up under later Brâhmanical usage."[1]

Here the case is perhaps put too strongly; but it to some degree justifies the distrust felt by one school of anthropologists in the value of skull measurements as a final test of race.[2] Hence another factor, the breadth of the nose, has been selected as a criterion. Even the most casual observer cannot fail to remark the basal breadth and coarseness of the Dravidian nose as compared with this more finely moulded feature in the higher races. Mr. Risley has gone so far as to say that "it is scarcely a paradox to lay down as a law of the caste organisation in Eastern India that a man's social status varies in the inverse ratio to the breadth of his nose."[3] Here again, as Mr. O'Donnell and Surgeon-Captain Drake-Brockmann point out, there are startling variances in the figures, which illustrate the necessity of caution.[4]

In the present state of our knowledge, then, on this subject the most reasonable view seems to be that while on the whole there is a remarkable uniformity of type judging from the skull measurements of the races of Northern India, and the pure Âryan type is not so readily separated from the Dravidian as it has hitherto been the habit to suppose, there may be minor or subsidiary variations in the cranial form which may lead to clearer knowledge. The total population of these three great Provinces, Bengal, the North-Western Provinces and the Panjâb is about one hundred and forty millions (Russia in all contains about one hundred and thirty millions). The number of measurements hitherto made is quite inadequate to form a sure basis for deciding the ethnical affinities of such enormous masses of men. Besides this much investigation on the East African side will be required before the materials for decision are available. The obvious moral is that measures are urgently needed for the prosecution of anthropometry in this part of the world on a much wider scale than has hitherto been attempted.

The inference suggested by this summary of results is then, that the so-called Âryan invasion of the Peninsula probably assumed a form quite different from the usual conception of it. It was apparently never an invasion in the common sense of the word, an inroad of a fully organised nation, overwhelming and enslaving the indigenous races, such as was, for instance, that of the Turkish tribes into Europe. The colonisation of Central Asia by the Mongol races probably took place through the Indian Peninsula, and this was followed by a continuous southward movement of the Âryans which was only part of that great series of emigrations which went on continuously during prehistoric times. Their incoming may have been gradual and spread over vast eras of time: it may have taken the shape of successive waves of colonists, never very numerous, and establishing their superiority more by the influence of their higher culture than by actual brute force. In some places

[1] Crooke, *Intro.*, cxxxvii.
[2] Keane, *ibid.*, 177.
[3] Risley, *ibid.*, i, *Intro.*, xxxiv.
[4] Crooke, *ibid.*, i, *Intro.*, xxviii *seq.*; cxxiii.

they may have become real over-lords of the races which they found in the country: in other parts the conquered may have absorbed their conquerors. This theory would in a measure account for some of the most difficult problems in the ethnology of upper India—the increase of dolichocephaly towards the north-west frontier, the prevalence of a higher type in Râjputâna on the fringe of the western deserts, the occurrence of the Jâts and Gûjars in the valleys of the Indus and Jumna, who possibly represent an independent body of colonists. It would also explain the gradual spread of the Âryan culture towards the East as marked by successive stages of occupation from Âryavartta, the sacred land of the Âryans in the Eastern Panjâb to Indraprastha or old Delhi on the Jumna, thence to Hastinapura on the Ganges, to Ayodhya on the Sarju, and later on along the Gangetic Delta.

This line of argument, again, suggests what seems to be a prevalent misconception of the character of the conquest of the pre-existing races by the Âryans. The common view is that the pure Dravidians, as we now find them along the hilly backbone of the Peninsula, were pushed back into these inaccessible retreats, as the Celts were driven into Wales by our Teutonic forefathers, the existing races of the Plains being that portion of the earlier people which was conquered and enslaved. This theory, however, seems to be inconsistent with what we know of the method in which conquering races occupy a tropical or semi-tropical country. Such occupation does not follow the line of the fertile plains and rich alluvial valleys, simply because the lowlands are generally covered with impenetrable forest, swarming with dangerous beasts and more dangerous malaria. It rather follows the course of the lower hills which flank the riverine valleys. Hence it seems not improbable that the original seat of the Dravidians may have been in the mountainous region where we meet them at present. The earliest Âryan legends strongly suggest the conclusion that the lowlands were even in their time an inaccessible jungle, such as travellers of to-day find in the valleys of the Amazon and its tributaries. The forests along the skirts of the alluvial tract were probably then as they are now, comparatively open. If the arrival of early man in India was, as may have been the case, antecedent to the geological convulsions which raised the Siwâlik range, the Ganges valley may then have been a tidal estuary, becoming in the course of time gradually silted up by the detritus of the great Himalayan rivers, and as it grew became clothed with thick malarious jungle.

It seems not improbable, then, that it was in the southern plateau that the first Dravidian settlements were formed. Then as now they may have supported life mainly from the products of the fairly open jungles which formed their early home, and there they evolved those rude industries which form their mode of livelihood even to the present day.

This suggestion seems to be confirmed by the fact that it is not in the rich alluvial plain, but on the southern plateau that we find the remains of the most primitive life, the dolmens beneath which they buried their dead, the menhirs which marked the graves or formed a home for the ghosts of their famous chiefs or

priests, the rude stone implements with which they waged war on the wild beasts. There is, I believe, no instance of the occurrence of such remains *in situ* in the river valleys of the north. They abound in the southern hills and in some places as at Kon in Mirzapur, I have myself seen one of the primitive factories where these weapons were chipped and ground.

Further, there seems little doubt that these people were up to comparatively recent times in the Age of Stone. This is shown by the forms of the implements which they use to the present time, which distinctly reproduce in metal the neolithic forms. Less certain is the evidence from rock paintings in the Vindhyan caves discovered by Mr. J. Cockburn, which are said to represent the slaying of the Sâmbhar stag and the rhinoceros by jungle-folk armed with stone weapons. These need not necessarily be very ancient, as the Sâmbhar still abounds in these hills and Akbar, a contemporary of Queen Elizabeth used to hunt the rhinoceros near Chunâr. As Dr. Ball has shown, the Khariyas appear to have been in the Stone Age quite recently.[1]

The same result is arrived at from certain survivals in custom, in which iron is regarded as a substance invested with mystic powers, and the iron-founder supposed to be a sacred or uncanny personage—a feeling which I need not remind you is a wide-spread feeling among savages. Thus, the Magahiya Doms—a very primitive race—boycott any member of the tribe who uses an iron implement in committing a burglary. These people in taking an oath clear a piece of ground and plaster it as if for sacrifice; they then swear on a piece of iron and a copper coin placed in the centre.[2] So the Pankas, pure Dravidians, swear on a piece of iron placed in a drinking vessel; and the Nats make their oath on a bit of copper.[3] The same feeling shows itself in the very common use of iron, copper or brass as scarers of demons. The young mother, the bridegroom, the mourner under taboo all protect themselves with one or other of these metals.[4]

I have referred to the iron manufacture carried on by the Agariyas. It would be an interesting problem, with which I have now no time to deal, to inquire whether this was an independent discovery made by the Dravidians or taught them by the Hindus. Iron, though known to the early Iranians, does not appear in the literary monuments of the Hindus till the close of the Vedic period, and then, as in the Homeric poems, seems to have been scarce and valuable. The wonderful iron pillar at Delhi, perhaps the oldest iron monument in the country, is 60 feet long and weighs 17 tons. How such a mass of wrought-iron could have been forged is a standing wonder to metallurgists of our time. It bears an inscription dated in the third century of our era. How much older it may be no one dares to say. Needless to say we have no literary evidence within the Dravidian area, and, as far as I am aware, no definite tradition regarding its origin. It is

[1] *Jungle Life*, 91.
[2] Crooke, *ibid.*, ii, 331.
[3] *Ibid.*, iv, 117, 75.
[4] Crooke, *Popular Religion and Folk-lore of Northern India*, ii, 11, 15.

possible that indications of the origin of the art in Central India may be found in the shape of the furnace or bellows and in the mode of manufacture.

I would suggest, then, that the present Dravidian jungle-races may have occupied their present settlements from the very earliest times, and that so far from having been pushed back into the rugged hill tract by the advancing Âryans, the course of their migrations may have been very different. Possibly the impulse to clear the fertile alluvial valleys may have come from the Âryans, a race of farmers and breeders of cattle. In this task they were probably aided by bodies of Dravidians migrating from their forest homes and gradually losing their identity in the presence of a people of superior energy and intellectual power. To this day the Dravidian, like the Thâru of the marsh lands at the foot of the northern hills, is the great pioneer of civilisation. It is he who is gradually converting these immense fens and savannahs of grass and reeds into fertile rice fields. This may have been the task of the Dravidian race for countless generations; even now as in the past his work, one of enormous importance to the world, has met with no recognition. This task he is able to perform, because, though not malaria-proof, he endures it better than the other races.

But there is another impulse working in the same direction which it needs an imaginative savage thoroughly to understand. Among primitive people accustomed to the belief that disease is due to evil spirits, it has ever been a desire to seek communion with the divinities of earth and hill and jungle, who are in their belief the active agents in bringing sickness and death. Obviously the denizen of the jungle is more likely to be in communion with these local powers than the foreigner, and without his aid forest reclamation could hardly progress. Hence it comes that even to the present day the priests of the local gods, both in hill and plain are recruited from the most secluded and least progressive of the jungle-folk.[1] I may go even farther than this, and suggest that as the Majhwâr Gonds have selected out of their own body a class of local priests, the Patâris, the example may have led to the evolution of the Brâhman priest on Indian soil, when the advancing intricacy of religious ritual demanded the services of a functionary more skilled in the art of spells and incantations than the original Âryan house-father priest. From this point of view it is significant that some branches of Hindu ascetics, such as the Jogi and Sannyâsi, retain many practices which, whatever be their origin, are obviously not Hindu. Thus, they do not wear the scalp-lock; they either never cut their hair or shave it off completely; they never burn their dead, but bury them or fling them into rivers, and when they bury they place the corpse in a sitting posture with the arms supported by a crutch—all customs quite opposed to Hindu ritual.[2]

The same feeling in regard to the jungle-folk comes out in certain rites and privileges which they enjoy to this day. Thus, the Khangârs act as marriage

[1] Risley, *Tribes and Castes*, i, 475; ii, 83, 309; Crooke, *Tribes and Castes*, i, 8; ii, 85, 333; iii, 322; *Popular Religion*, ii, 95.

[2] Crooke, *Tribes and Castes*, iv, 275.

priests for the Bhadauriya Râjputs; one of the Mîna tribe always invests the Mahârâja of Jaypur, a Hindu of the Hindus; the Sânsyas, a nomadic thieving race, act as bards and genealogists to the Hindu Jâts.[1] To this day the special function of watching the fields at night in Hindu villages is assigned to Dravidians, apparently because as owners of the land they are more in touch with the jungle and its beasts, with the evil spirits which walk in the darkness.

This brings me to another branch of my subject which is perhaps of wider interest than the ethnological questions which we have thus hastily surveyed. What we have now to note is some survivals of primitive custom. Their religion, a compound of animism, fetishism, and a crude demonology, is beyond the scope of this paper.

This is the place for the explanation of a fact which has given rise to some criticism. It is generally admitted that for many of these tribes there is ample evidence that at one time they passed through what is called the totemistic stage. We find numerous sections the titles of which are obviously drawn from sacred animals, plants and other objects; we have many instances in which the section ascribes its origin to the so-called totem; there are many cases in which the totem is treated with respect, and any attempt to destroy or injure or eat the totem is prevented by a rigid taboo. On the other hand, many instances might be quoted where a section which on these indications might be treated as totemistic does not specifically taboo the assumed totem, or rather, if we may put the case so, transfers the taboo to something else which is not the tribal totem. This, on the face of it, suggests doubt as to whether these tribes did ever pass through the totem stage, or whether the original idea may not have been so worn away or overlaid by other and antagonistic beliefs that nothing now remains but the bare husk of the primitive belief, and this may in later times have originated from another line of thought. Thus, to give a single instance, when we find the totem belief in this stage of degeneration, it is open to any one to say that the connection of the sept or section with the sacred beast or plant is merely a case of tree or animal worship, and need not necessarily imply that the worshippers of it were ever consciously in the totem stage. This view of the case is, no doubt, in some instances correct, and it is quite possible that some usages and beliefs have been from time to time labelled as totemistic which may be explained in another way. When we have to deal with the mere husk of a custom or rite caution is clearly necessary, and some of us who have been carried away by the suggestiveness of the totem theory, which threw novel light on many obscure facts, and enabled us to bring at least into a semblance of order many conceptions which were merely isolated fragments of belief destitute of any reasonable meaning, may have gone too far. This is not to say that in the present stage of the controversy the totem theory must be altogether abandoned; rather that it may be necessary in some cases to revise our co-ordination of the evidence, or perhaps to admit that there is no common master-key to all the mysteries, and that while the human

[1] Crooke, *Tribes and Castes*, iii, 229, 490; iv, 279.

mind works with curious regularity through the whole range of savage thought, the local factor, or what the mathematicians call the personal equation, must be more closely weighed. But to return to these Dravidian clan taboos and the curious variances which they present—one point must be kept carefully in mind. Nowadays most of the leaders of the totem school are prepared to admit the weakness of the evidence for totemism within the so-called Âryan area. Here possibly tree and serpent or animal worship will be found to explain most of the facts without the necessity of calling in the aid of totemism. This fact profoundly affects the question of the Dravidian taboos. Here, I imagine, we can watch the conflict of two sets of beliefs, which has modified the primitive tradition. The Hindus, for instance, protect the cow by a powerful religious sanction, while the Dravidians used to sacrifice and eat her. So the Dravidians used to live on many jungle-beasts which the Hindu considers impure—the rat, the squirrel, the lizard, the crocodile. At present it is only the casteless, vagrant tribes in the Plains which have been able to resist the pressure of the superior race to class such creatures as abominable. Here and there the custom is in process of change, the more Hinduised members of the tribe, with a view to social advancement, adopting rules which prescribe extreme purity; the more conservative or less advanced section adhering to the primitive practice, but in some cases with real or assumed secrecy.

Thus, under Hindu influence there has been a tendency to replace the old totem or sacred beast by some eponymous ancestor drawn from the ranks of Hindu saints or worthies, and here often the familiar influence of folk etymology comes into play. Thus Rikhmun, the divine ancestor of the Bhuiyas and Musahars, who is called a deified Rishi or saint, is probably in reality Riksha, the bear: so Kachchapa, the tortoise, has become the saint Kasyapa, and Bhâradvaja, the lark, turns into a third Hindu worthy.

With so much reservation about totemism, we may say that among these people it appears specially in connection with marriage, the primary social unit being what may provisionally be called the totem clan, which is exogamous; marriage and sexual intercourse between members of the clan being severely forbidden. Later on, as under Hindu influence the totem link became weakened, it became necessary to invent special titles or watchwords to define the exogamous groups, as we find in the case of the Santâls and Halwâis, among the latter the passwords being embodied in a series of mnemonic metrical formulæ.[1] These exogamous sections or septs later on became combined into the existing tribes, and this combination appears to date from the period of the adoption of descent through the father in lieu of the matriarchate, which, as we shall presently see, was probably the primitive rule. The method in which this amalgamation takes place may be illustrated by the analogous process among the West African tribes. Thus one of the Dog clan marries a Leopard; under the old system the children would be Leopards; but when the father's share came to be recognised they would

[1] Risley, *ibid.*, ii, 227; Crooke, *ibid.*, ii, 482 *seq.*

be Dog-Leopards, and would so belong to two clans. These children in the same way marry into two clans, the Cat and the Snake, and their offspring would belong to four clans.[1] This system would obviously soon become unworkable and the clan rule has to be replaced by some other formula, as, for instance, by prohibiting the marriage of any descendants of a common pair or tabooing the intercourse of cousins, which is actually what has happened among the more advanced Dravidians, while the Gonds marry cousins by preference.

There are also various indications which go to show that in India this tribal syncretism may be of comparatively modern date. This is shown by the adoption of a purely occupational title for the tribe which is the result of such an amalgamation of septs or sections. This is the Hindu method. Among the Dravidians the aggregate so formed is commonly designated even by a vaguer term, such as Bhuiya or "landowner," Ho or Kol, "men," Mânjhi, Majhwâr, "middlemen"; Pahariya, Dhângar, "hillmen"; and so on. And the same conclusion follows from the fact that the boundaries of many of these tribes are even now ill-defined. The Mundas, for instance, are recognised by the Khariyas as elder brethren; Mundas sometimes marry Khariya women, but will not give brides in exchange. So Kharwârs and Cheros are traditionally connected: the Cheros used not long ago to intermarry with the Bhuiyas, but the latter have refused connubium since the Cheros have taken to intermarrying with Kols.[2] Many of the lower tribes, again, habitually recruit their numbers from outsiders: others, like the Pâsis, admit the children of their women and care little whether the father was a tribesman or not.[3]

These combinations, again, display no real permanence. New groups are ever being formed and recombined on the basis of some change of custom, such as the abolition of the rule of infant or widow marriage, some taboo regarding food or the like. Thus, among the Bhuiyas of Lohârdaga and Mirzapur the old tribal system of exogamy seems to be falling into disuse, and many groups which were once exogamous are now endogamous.[4] So the Kurmis are giving up their old totemistic sections in favour of artificial groups.[5] All these races, too, have become conscious that the totem rule of exogamy does not prevent close intermarriage, so they have been obliged to reinforce it by the establishment of personal prohibited degrees which prevent the marriage of cousins or those directly descended from one common ancestor. New local sections are thus constantly formed, but with an inconsistency, in some respects natural, they still in some cases maintain the old grouping, or prefer to bury their dead in the ancient tribal cemeteries.[6]

It may also be suspected that the size of the group has considerable influence in deciding the question of exogamy or endogamy. This is clearly shown in the

[1] Ellis, *Yoruba-speaking Peoples*, 175.
[2] Risley, *loc. cit.*, i, 466, 473; Crooke, *ibid.*, ii, 106, 217.
[3] Crooke, *ibid.*, iii, 143.
[4] Risley, *ibid.*, i, 114; Crooke, *ibid.*, ii, 73.
[5] Crooke, *ibid.*, iii, 351.
[6] Crooke, *ibid.*, ii, 74, 174; iii, 169, 289, 337; iv 112. Risley, *ibid.*, i, 469; ii, 147

case of the vagrant tribes, who possess a form of horde exogamy in which marriage is prohibited within the gang, as in the case of the Sânsyas or Hâbûras.[1]

I have said that in all probability these tribes have passed through the stage of the matriarchate, or where descent is counted through females. It may be worth while considering what evidence exists on this point.

We have, in the first place, a long series of legends which attribute the descent of the tribe to a female ancestress, such as the Agarwâlas from Mâdhavi, the Musahars from Savari, the Kanjars from Nathaiya[2]; and this story in many cases takes the form of naming as the ancestress of the present clan a pregnant woman who was saved from the massacre which destroyed her brethren. This tale is told, for instance, of the Chamar Gaur Râjputs, the Ghatwâl Jâts, the Khangârs, the Thatheras.[3] Or, by another version, they spring from an innocent wife who has been discarded on some false charge, as the Mochis, the Kânhpuriyas, the Rors, who sprang from Sîta when expelled by Râma Chandra, and Lakhana Deva, the founder of the Sombansis, was a posthumous son born in exile.[4] This, I need hardly remind you, is a very favourite *motif* of many folk-tales, as, for instance, in the Hindu tale of the Son of Seven Mothers.[5]

We have, in the second place, many cases in which the sister's son acts as the funeral priest. This is the case with Doms, Hâris, Tatwas, Basors, Beriyas, Bhangis and other menial races.[6] In other cases this duty is assigned to the son of a female cousin or son-in-law. Among the Dhânuks, when a man is poor he feeds at the death rites only his sister's or daughter's husband; among the Bhuiyârs the sister's son is held in particular honour, and periodical gifts are made to him, as to a Brâhman.[7]

Thirdly, we find relations on the side of the bride acting in many cases as officiants at marriage. Thus, among the Bâwariyas, it is the husband of the bride's sister who acts as priest; among the Kanjars it is the sister of the bride, her husband or daughter, who performs the circumambulation rite; among the Bhuiyârs it is the bride's younger brother who pours rice over the pair.[8] Often, as among the Majhwârs, it is the sister's husband of the bridegroom who acts as best man, arranges the marriage or carries the bridegroom in his arms into the marriage booth.[9]

Even more important is the prominent part taken by the mother of the bridegroom in the marriage rites of the Musahars, while among the Majhwârs and

[1] Crooke, *ibid.*, iv, 279; ii, 474.
[2] Risley, *ibid.*, i, 5; Crooke, *ibid.*, iv, 17.
[3] Crooke, *ibid.*, i, 78, 195; iii, 33, 228; iv, 407.
[4] Risley, *ibid.*, ii, 95; Crooke, *ibid.*, ii, 118; iv, 244, 327.
[5] Temple, *Wide Awake Stories*, 101.
[6] Risley, *ibid.*, i, 245, 316; ii, 300. Crooke, *ibid.*, ii, 325, 335; i, 226, 246, 288; ii, 183, 285; i, 83.
[7] Risley, *ibid.*, i, 245. Crooke, *ibid.*, i, 246, 288; ii, 273, 95.
[8] Crooke, *ibid.*, i, 234; iii, 142; ii, 92, 62.
[9] Crooke, *ibid.*, iii, 422; iv, 65; ii, 291; iii, 244; ii, 87 *seq.*

Mârwâris she solemnly offers her breast to him as he is starting to fetch home his bride.[1]

Lastly, comes the important part played in the marriage rites by the maternal uncle or mother's brother. Thus he very often arranges the marriage of his nephew; or he is trustee of the bride's peculium; or he digs the sacred earth for the wedding; he takes round the wedding invitations; he lifts the bridegroom into the house of the bride; or the maternal uncle on each side give the wedding clothes or other gifts to their nephew or niece.[2] Finally, he is sometimes, as among the Mahesris, the marriage priest, and takes the bride in his arms seven times round the bridegroom; or, as among the Doms and Dharkârs, he pours water on the hands of the pair and blesses them.[3]

This leads to the consideration of the forms of marriage in force among these races. At the outset it may be said that any mode of connexion between the sexes which does not contravene the rules of exogamy, and is approved by the kinsfolk, ranks as a marriage with all its usual incidents and privileges. It is a later development of custom which draws any distinction between the children of a bride married as a virgin, a widow or other woman whose connexion with a man is legal under their marriage code.

In dealing, however, with their marriage-law the same difficulty meets us as in the case of their social structure. Everywhere we find merely husks of early custom which have been overlaid by conceptions borrowed from other races. Hence the original theory on which they were based is often obscure, and they may be interpreted in various ways according to the line of influence which was for the time prepotent.

Thus, to take the very primitive rite of group marriage, of this, in the first place, we seem to find a survival in the rule that all marriages more or less and in particular the less regular forms, such as widow marriage or the Levirate, that is to say, the appropriation of the wife of a dead man by his younger brother, must be carried out with the sanction of the Panchâyat or Council consisting of the adult and married males of the tribe. This seems to take us back to a time when the woman who became derelict in consequence of widowhood or desertion came again under the general control of the clansmen.

Secondly, we find indications pointing in the same direction in the rule so prevalent among these races that prenuptial incontinence, provided the lover be a member of the tribe and outside the prohibited degrees, is condoned.[4] Here, too, we meet as usual considerable variance of practice. Among some incontinence within the tribe is little regarded. Among others when the results of incontinence

[1] Crooke, *ibid.*, iv, 24; iii, 421, 481.

[2] Crooke, *ibid.*, i, 3, 225; ii, 7; iii, 244; iv, 65. Risley, *ibid.*, ii, 69. Crooke, *ibid.*, i, 225; ii, 77, 180, 249; iii, 421.

[3] Crooke, *ibid.*, iii, 408: ii, 324, 283.

[4] Risley, *ibid.*, i, 401 (Kândhs); ii, 83 (Mauliks); ii, 102 (Mundas); ii, 116 (Musahars): ii, 141 (Orâons); ii, 334 (Turis). Crooke, *ibid.*, i, 223 (Basors); i, 243 (Beriyas); i, 284 (Bhangis); ii, 57 (Bhoksas); iv, 388 (Thârus).

become apparent the pair are married under orders of the Council.[1] In other cases, again, a sacrifice of expiation is required; or this takes the form of a compulsory feast to the tribesman, which the relatives of the girl are bound to provide.[2] Or in other cases the paramour is fined or has to give restitution. This among the Dharkârs is so common that there is a special name, "the mother's sheet," for the cloth which under such cases the lover has to provide.[3] It is only among the more degraded scavenger tribes that the taboo against connexion with an outsider is relaxed. These tribes habitually recruit their numbers from abroad and treat as legitimate the children of their women when the father is drawn from a caste superior to their own.[4]

The custom of group-marriage has other developments which it is sometimes not easy to trace. Thus, it probably accounts for some or most of the marriage taboos which are so common in savage life. The most common of these taboos is that which prevents a man from addressing, touching, or even looking at his mother-in-law. This has been explained by Sir John Lubbock[5] as a survival of marriage by capture, the relatives of the bride being hostile to the man who has captured their woman; or, as by Mr. Keane,[6] from the analogy of the Patagonian practice that on the death of any young person the head of the family was required to despatch some aged woman, and he naturally selected his mother-in-law as the appropriate victim. Hence, it is said, through fear of such a fate, women acquired the habit of avoiding their sons-in-law.

It would be dangerous to assert that all savages have arrived at the same custom by the same route, but in the Patagonian rite it would rather seem that the specialisation of the mother-in-law was a later phase. At any rate it is hardly logical to treat the mother-in-law taboo apart from other taboos of the same class. Thus, among the Dravidians one of the most important of the marriage taboos is that which prevents a man from coming in contact in any way with the wife of his younger brother. Most of these races protect her from her senior brother-in-law by a most stringent sanction, which, in the case of the Dharkârs, reaches the point that a man contracts a stain if her shadow even crosses his path.[7]

Secondly, comes the taboo of the wife's elder sister. A man may marry two sisters, but he may not marry the elder if the younger be already his wife. She is said to be in the position of mother to her younger sister, but this is obviously a later development of the taboo.[8]

[1] Risley, *ibid.*, i, 91 (Bhakats); ii, 122 (Bhumij); ii, 57 (Malês); ii, 89 (Mech); ii, 243 (Savars); ii, 324 (Tipperahs). Crooke, *ibid.*, ii, 87 (Bhuiyas); ii, 412 (Ghasiyas).

[2] Risley, *ibid.*, ii, 57 (Malês). Crooke, *ibid.*, ii, 168 (Châis); ii, 218 (Cheros); iii, 218 (Kewats); iii. 419 (Majhwârs); iii, 419 (Mallâhs).

[3] Crooke, *ibid.*, ii, 87, 280.

[4] Crooke, *ibid.*, i, 169.

[5] *Origin of Civilisation*, 11 *seqq.*, 192.

[6] *Ethnology*, 218.

[7] Risley, *ibid.*, ii, 141 (Orâons). Crooke, *ibid.*, i, 220 (Bhangis); ii, 10 (Bhars); ii, 84 (Bhuiyas); ii, 97 (Bhuiyârs); ii, 139 (Biyârs); ii, 190 (Chamârs); ii, 287 (Dharkârs); ii, 339 (Doms); ii, 418 (Ghasiyas); iii, 113 (Kalwârs); iii, 252 (Kharwârs); iii, 262 (Khatîks): iii, 314 (Kols); iii, 333 (Korwas); iii, 444 (Majhwârs).

[8] Risley, *ibid.*, ii, 141 (Orâons). Crooke, *ibid.*, ii, 97 (Bhuiyârs); ii, 139 (Biyârs); ii, 287 (Dharkârs); iii, 314 (Kols).

Thirdly, we meet with taboos of more distant female relations—the maternal aunt, the first cousin on the mother's side, the relation of Samdhi, that is, persons allied by the marriage of their children.[1] Among the Pankas the father-in-law and mother-in-law of a married pair do not speak to each other.[2] So we find taboos of the wives of the paternal uncle and nephew.[3] Among the Majhwârs a woman may not address her father-in-law by name.[4] Lastly and most significantly, the Korwas extend the taboo to their sister.[5]

I venture to suggest that the real explanation of this group of marriage taboos is to be found in the fact that they include persons with whom under the primitive rule of group-marriage connexion was permissible. These taboos persisted long after the social system which gave them birth had disappeared, and they had been replaced by a new series of exogamous rules and prohibited degrees.

Survivals of the same system of group-marriage may also be found in the body of custom according to which relatives on both sides aid or resist the bridegroom as he meets the bride. We have, first, the cases in which the female relatives of the bride resist the bridegroom. Thus, among the Maghs, the female relations of the bride bar the way of the bridegroom with a bamboo, across which he has to drink spirits with them; among the Ahîrs and Majhwârs the sister-in-law of the bride prevents the bridegroom from carrying her into the retiring room: among Baheliyas, when he comes into the room she sits on his back and has to be fed before she will release him: among the Kândhs, after the marriage has been concluded, the bride's male relations run away with her, while the village girls recapture her and restore her to her husband; among the Dângis, the bridegroom strikes the marriage shed with a fan and the bride's female relations beat the man who carries him.[6] It is not easy to correlate these customs under any one general principle. Partly they may suggest capture marriage, partly compensation to the relatives of the bride for the loss of her services, or they may be in part a survival of a stage of Beena marriage in which the bridegroom became entitled to all the sisters.

Even more puzzling are the cases in which the relations of the bridegroom obstruct him. Thus, among the Bhuiyas, when the bridegroom is starting, his mother detains him and must receive a gift before she releases him; the Agariya and Biyâr bridegroom's sister bars the entrance of the bride into her husband's house and demands a present.[7] Among the Gadariyas there is a mimic struggle

[1] Risley, *ibid.*, ii, 141 (Orâons). Crooke, *ibid.*, iii, 252 (Kharwârs). Crooke, ii, 10 (Bhars); ii, 54 (Bhuiyas); ii, 139 (Bhuiyârs); ii, 287 (Dharkârs); ii, 418 (Ghasiyas); iii, 262 (Khatîks); iii, 314 (Kols); iii, 444 (Majhwârs).

[2] Crooke, *ibid.*, iv, 118.

[3] Crooke, *ibid.*, ii, 97 (Bhuiyas); ii, 190 (Chamârs); iii, 113 (Kalwârs).

[4] Crooke, *ibid.*, iii, 444. [5] Crooke, *ibid.*, iii, 333.

[6] Risley, *ibid.*, ii, 31. Crooke, *ibid.*, i, 61; ii, 422; i, 108. Risley, *ibid.*, i, 402. Crooke, *ibid.*, ii, 249.

[7] Crooke, *ibid.*, ii, 77; i, 4; ii, 134.

between the relations of the bride and bridegroom at the home-coming.[1] Here we may guess a case of the transition from father-right to mother-right, or an indication of the disuse of Beena marriage, and in lieu of it, the rule of bringing the bride to the house of her husband, the same development of custom being seen in the common plan of erecting the retiring room at the house of the bride as well as that of the bridegroom. On the other hand, there are cases, as among the Kharwârs, where the bride at the home-coming refuses to dismount from her litter and enter the house of her husband until her mother-in-law gives her a present, or as among the Koiris, where the bridegroom's sister gives a fee to the bride as she dismounts.[2] So among the Hos if the bride be taken to her husband's house and married there, not at her own, she runs away after three days, and the bridegroom is obliged to recapture her by force.[3] These customs possibly point to a disuse of Beena marriage, but this series of facts is so intricate that it is hardly safe to dogmatise about them.

The line, again, between customs such as these, and survivals of actual marriage by capture cannot easily be drawn. Many incidents in the ordinary Hindu marriage rites have been explained as pointing in the same direction—such as the objection to marrying in neighbouring villages, the formal nature of the marriage procession in which only males take part, and all are mounted or armed; the arming of the bridegroom, the rule that they arrive at the bride's village late in the afternoon or by night; the mock fight at the bride's door, the refusal of entertainment at the hands of her friends, the bloody hand stamped on the shoulder of the boy's father as he goes away, the wailing of the bride as she is carried off, the taboo of the bride's village to her husband's relations after the marriage, the abusive terms applied to male relations by marriage, and so on.[4]

Had time permitted, it might be possible to suggest other explanations of some of these customs. Thus, the arming the bridegroom is possibly a prophylactic against evil spirits, and this also may explain cases in which the bride ceremoniously assaults her husband. Thus, among the Kanjars after marriage the pair go to a tank and the bride strikes the bridegroom with a whip of cloth specially made for the purpose; or among Dhuniyas, when the bridegroom arrives the bride strikes him two or three times on the head with a small stick.[5] From the analogy of parallel cases, which are many, it might be suggested that the common custom of flagellation, with the object of expelling evil spirits, may be at the root of the matter.[6]

There are, however, cases in which the custom of marriage by capture seems clear. Thus, at an Agariya marriage the bride hides in the house and is dragged out by the bridegroom; the Bhuiyâr girl wrestles with the youth as he applies

[1] Crooke, *ibid.*, ii, 362.
[2] Crooke, *ibid.*, iii, 246, 290.
[3] Risley, *ibid.*, i, 325.
[4] Crooke, *ibid.*, iv, 390 *seq.*
[5] Crooke, *ibid.*, iii, 142; ii, 298.
[6] Crooke, *Popular Religion and Folk-lore*, i, 99, 155.

vermilion to her hair; the Sânsya bridegroom hauls the bride seven times round the marriage pavilion and then applies vermilion to her hair.[1] We know that up to quite recent times the Thârus of the lower Himâlaya used to obtain their brides by capture from other tribes.[2]

Passing on to other modes of marriage, we find that Beena marriage, or as it is called Gharjaiyân, which means that the bridegroom lives with the family of his bride, prevails among many of these tribes.[3] The period of probation during which the Dravidian Jacob serves for Rachel is a year among the Ghasiyas, and among the Gonds from seven or eight months to three years or more.[4] Here we have a survival of the practice by which the bridegroom was adopted into the kin of the bride.

The opposite conception, by which the bride was introduced into the kin of the bridegroom, appears in many marriage rites, though here, too, there is a trace of the older rite in *confarreatio* or eating of the pair together, which is generally done at the house of the bride, the modification of custom being shown in the etiquette by which the youth refuses to eat with his wife at her house until he receives a gift.[5] But the more important *confarreatio* rite is carried out at the house of the bridegroom. Thus, the Majhwâr bride is not allowed to enter her new home till she and her husband eat rice boiled in milk; and to illustrate the sacramental conception of this meal, we find that the Dhobi youth does not eat boiled rice until he tastes it for the first time at his wedding feast, and the Sânsya and Majhwâr bride after her home-coming has to cook for the kinsfolk of her husband, while among the Musahars new fire is solemnly made for the cooking sacrament.[6] We have, I need hardly say, a survival of the same rite in the solemn cutting of the wedding cake by our brides.

This marriage sacrament, too, often takes the form of a solemn drinking rite, as of the parents of the pair who, on betrothal, solemnly drink together out of platters made of the leaves of a holy tree, or bride and bridegroom drink together, or join in drinking with the clansmen.[7]

More obvious still is the motive of the blood covenant. Here we can observe the stages of the degradation of custom from the use of blood drawn from the little finger of the husband which is mixed with betel and eaten by the bride among some of the Bengal tribes.[8] The next stage comes among the Kurmis, where the blood is mixed with lac dye.[9] Lastly, come the rites common to all these tribes by which the bridegroom, often in secrecy, covered by a sheet, rubs vermilion on

[1] Crooke, *Tribes and Castes*, i, 4; ii, 87, 91; iv, 129, 280.

[2] Crooke, *ibid.*, iv, 389.

[3] Risley, *ibid.*, ii, 202 (Rautiyas). Crooke, *ibid.*, ii, 89 (Bhuiyârs); ii, 218 (Cheros); ii, 414 (Ghasiyas); ii, 434 (Gonds); iii, 242 (Kharwârs); iii, 42 (Majhwârs); iv, 128 (Parahiyas).

[4] Crooke, *ibid.*, ii, 414, 434.

[5] Crooke, *ibid.*, iii, 245.

[6] Crooke, *ibid.*, iii, 419; ii, 292; iii, 426; iv, 253, 25.

[7] Crooke, *ibid.*, ii, 76, 290. Dalton, *Descriptive Ethnology of Bengal*, 193. Crooke, *loc. cit.*, iii, 423, 24; ii, 290.

[8] Risley, *ibid.*, ii, 189, 201.

[9] Risley, *ibid.*, i, 532.

the parting of the girl's hair and the women relations smear their toes with lac dye—all palpable degradations of the original blood rite. That the rite is sacramental is clearly shown by the fact that the widow after her husband's death solemnly washes off the red from her hair or flings the little box in which she keeps the colouring matter into running water.[1]

The wife is thus by the blood sacrament introduced into the sept of her husband. But a further precaution is necessary to symbolise that she throws off all connexion with her own clan. This tribal totem is often generalised by a row of clay images of parrots which are fixed on the marriage shed.[2] This is knocked down by the bridegroom, and the remains are scrambled for by the unmarried youths of the tribe, who by this influence hope to share in the symbol which will aid them in due time to enter the marriage state.[3] Or the tribal mark takes the form of conventional ornaments, known as the Toran, which are hung over the door of the bride, and these the bridegroom demolishes, sometimes using for this purpose the branch of a sacred tree.[4] The same rite, I venture to suggest, shows itself in the custom by which at the end of the marriage the youth's father shakes the pole of the wedding shed, which can hardly imply capture or resistance, because he is given a present for so doing.[5] A further development of custom is shown in the rite where five piles of rice are placed on a curry-stone and the youth grips the girl's ankle and makes her knock them down with her toe. The words denoting the pile of rice and the exogamous group are the same, and the rite seems to symbolise the fact that the bride has now solemnly abandoned her own group and entered that of her husband.[6]

Another series of marriage rites seems to be largely based on the desire to bring the wedded pair into intimate connexion with the reproductive powers of nature. This, in India at least, seems to be one explanation of the widespread custom of tree-marriage. One, and the most usual means of establishing communion between the worshipper and his deity is an offering, as we find it for instance in the familiar custom of dedicating the first-fruits. Hence seems to have arisen a very similar idea in the case of marriage, as we see in the numerous instances of the marriage of girls to a god as a preliminary to human marriage. In tree-marriage, then, the bride is first brought into communion with the spirit which occupies and animates the tree and by the communion shares in its fertility.

The custom of tree-marriage is familiar to the Dravidians, the tree usually selected being one regarded as sacred such as the mango, the *mahua*, the *siddh*.[7] In the original form of the rite the tree seems to have personified the bridegroom, as we see in the Gandhabanik ritual, where the youth climbs a tree and the bride

[1] Crooke, *ibid.*, ii, 135, 269.
[2] Crooke, *ibid.*, ii, 464 ; iii, 308 ; iv, 21.
[3] Crooke, *ibid.*, iv, 464 ; iii, 245.
[4] Crooke, *ibid.*, iii, 482, 486.
[5] Crooke, *ibid.*, iv, 22 ; ii, 111 ; i, 134 ; iv, 63.
Crooke, *ibid.*, ii, 284 (Dharkârs) ; iii, 425 (Majhwârs).
[7] Risley, *ibid.*, i, 293 (Gonds) ; i, 475 (Kharwârs) ; i, 531 *seq.* (Kurmis) ; ii, 41 (Mahilis) ; ii, 102 (Mundas) ; ii, 201, Rautiyas ; ii, 229 (Santâls). Crooke, ii, 78 (Bhuiyas) ; ii, 363 Gadariyas) ; iii. 374 (Lohârs) ; iv, 366 (Pâtars).

is carried on a stool seven times round him.[1] This ritual of walking round the tree in the course of the sun is common to these tribes, and then by a natural development of custom the tree becomes the centre pole of the marriage pavilion, which itself symbolises the over-spreading branches.[2] Later on the pole becomes a spear fixed up in the shed.[3] In most cases the shed is built of branches or poles of the tree held sacred by the tribe.[4] Its significance is clear in the case of the Dharkârs, who make the wedding fire-offering under the sacred tree. Nearly all these tribes also arrange a special booth into which at the close of the service the youth leads the bride. Thus, in the Hâbûra ritual, when the wedding is over one of the tribesmen mounts a horse and rides some distance over the plain close to the camp. The bridegroom takes the opportunity of leading the girl into the shed and consummates the marriage.[5]

The same desire to secure communion with the spirit of fertility embodied in the tree appears in the customs of the tree-dance, which is done on a date associated not only with the growth of the crops and with harvest, but with the seasonal period for marriage and the annual saturnalia, and in the rite of burning the Sambat or sacred tree, which is consumed to symbolise the birth of the new year and the revival of vegetative life.[6]

The same principle explains other marriage rites, such as that the wedded pair are seated on mats of holy leaves; that the anointing is done with wisps of the sacred Kusa grass; that the union is effected by the interchange of garlands or a flower is placed by the youth in the girl's hair.[7] To us it has come down in the orange blossoms and bridal bouquet.

Hence divorce, the abolition of the marriage covenant, is symbolised by the tearing of a leaf of the holy tree or of a piece of grass, or the plant itself is retained as a life token, a pledge of fidelity.[8] Or the tree itself is associated with birth, and as among the Mushars, the child is named from the tree under which it happens to be born, or a leaf of the holy tree is given as a remedy in cases of difficult delivery.[9]

It is by a natural development of ritual as the tribe advances from a rude jungle-life to a settled career dependent upon agriculture, that the kindly influences of mother earth and of the cultivated fruits of the soil are brought into communion with the pair at marriage. We see this in the institution of the Matmangara or sacred earth at marriage, which is dug with various mystic rites and often used to

[1] Risley, *ibid.*, i, 266.
[2] Crooke, *ibid.*, ii, 283 (Dharkârs); ii, 324 (Doms); ii, 344 (Dorhas); ii, 415 *seq.* (Ghasiyas).
[3] Crooke, *ibid.*, iii, 442 (Majhwârs).
[4] Risley, *ibid.*, i, 532; ii, 31, 41, 49, 69, 126. Crooke, *ibid.*, i, 4, 107, 170, 281; ii, 180.
[5] Crooke, *ibid.*, ii, 475 *seq.*
[6] Risley, *ibid.*, ii, 70, 145. Crooke, *ibid.*, ii, 83; iii, 145; ii, 137, 410.
[7] Risley, *ibid.*, i, 503. Crooke, *ibid.*, ii, 155, 183; iii, 422: ii, 133: iii, 244. Risley, *ibid.*, 49, 61, 97; 125, 231.
[8] Risley, *ibid.*, i, 533; ii, 57, 70, 116, 231, 278, 89.
[9] Crooke, *ibid.*, iv, 27; iii, 243.

form the fireplace on which the sacramental marriage meal is cooked.[1] Hence also comes the use of grain at marriage which is poured over the bride as a fertility charm. And here in India the usages of two races meet. The Ârayn sacred grain was barley, which among all the Indo-Germanic races is closely associated with sacrifice. The use of wheat is much later, and rice, which we curiously enough have adopted in our own marriage rites, probably came from the Dravidians. In some cases among these jungle tribes the pair touch the holy grain; it is poured over the bride by her brother as she revolves round the shed, or special wheaten cakes are baked which the married pair tread on, or the women throw packets of betel and handsful of barley over the bridegroom as he enters the house, or a saucer of pulse is placed near the holy water jar and the marriage lamp.[2] Or again, as among the Orâons, the bride and bridegroom stand on a stone, which is not an Âryan custom, under which a sheaf of corn rests upon a plough yoke.[3]

The ploughshare is again frequently fixed in the centre of the wedding shed; the bride's mother waves it over her head as a charm; or the bride and bridegroom tread on the baskets used on the threshing-floor to avoid the danger of touching the threshold, the barrier which defines the domains of the kindly house spirits and the evil demons who prowl beyond it; or the winnowing fan is used to pour grain over the bride as she moves.[4]

From this class of beliefs we reach a possible explanation of the use of oil in marriage, birth and death rites. Oil is the essence of the tree or plant, and symbolises the life, as fat is the essence of the animal sacrifice and always invested with mystic significance. Thus, we have cases of the burning of the resin of the sacred Sâl tree as a means of expelling evil spirits.[5] One branch of the Nâgesar tribe uses oil in lieu of vermilion, the survival of the blood covenant.[6] The use of oil at marriage is common. The bridegroom and bride are anointed with a mixture of oil and turmeric, a mystic plant; at a Dom marriage the fathers of the pair sprinkle oil and turmeric on the ground and invoke the Manes to bring the marriage to a happy issue; the women who dig the sacred earth receive a dole of oil for their hair: the Nat widow at marriage has her head anointed; and among the Bhuiyârs most significantly, the bride's father presses oil with his own hand and sends it to the youth for his anointing.[7]

So in the death rites it symbolises the food for the dead and among the Bhuiyârs it is thrown into running water near the place of cremation; mourners after the burning put oil on their toe-rings, or pass their feet through the smoke of burning oil, or touch oil in which a flower is placed, or rub themselves with oil and turmeric—all devices to scare the ghost which may be clinging to them and

[1] Crooke, *Popular Religion and Folk-lore*, i, 27, 292.
[2] Crooke, *Tribes and Castes*, ii, 486; iii, 141, 317, 379; iv, 23.
[3] Risley, *ibid.*, ii, 142. Winternitz, *Trans. Folk-lore Congress*, 269.
[4] Crooke, *ibid.*, ii, 180; iv, 21, 63, 146; ii, 268.
[5] Crooke, *ibid.*, iii, 445.
[6] Risley, *ibid.*, ii, 122.
[7] Risley, *ibid.*, ii, 126, 188. Crooke, *ibid.*, i, 5; ii, 90, 324, 353; iv, 66.

avoid the death taboo.[1] In the birth rites an old woman smears her hand with oil and makes a mark on the wall before the cord is cut.[2]

By a conception akin to those which we have been considering it is easy to understand the desire to bring the married pair into communion with the indwelling spirit which in savage belief causes the springs to flow and the rivers to run. Thus we have the Greek cultus of the nymphs and the belief that rivers and springs are Kourotrophoi, or nurturers of youth, to which the first hair of the child, a sacrifice of part of the child himself, is dedicated. Among the Dravidians the same belief shows itself in many forms—in the pouring of water over the hands of the wedded pair; in the Kalasa or sacred wedding jar placed in the pavilion, in the feet washing which implies that the bride washes of all trace of her original sept, and by tasting the water in which the feet of the bridegroom were washed becomes adopted into his clan; in the sacramental wedding bath in which the bride uses the water which served the same purpose to her lord; in the floating away in running water of the decorations used at the wedding, and many usages of the same kind.[3] Hence, by a natural sequence, pouring water over a woman's head is a symbol of divorce.[4]

The same belief shows itself in the woman after child-birth solemnly walking round the village well and smearing its platform with vermilion—again the symbol of the blood covenant.[5]

We thus see that while these Dravidian marriage rites embody some very primitive principles of marriage law, they also show evidence of a clear evolution of custom as the tribe emerges from the old jungle life, and they also illustrate the influence of the usages of other peoples as the forest races come into contact with a higher civilisation.

The same course of evolution is shown in the death rites to which I can now only very briefly direct your attention. The line of cleavage is generally taken to lie between burial and cremation, the former prevailing among people some of whom merely wish to put their dead out of sight, others desire to retain their spirits with them; the other adopted by those who believe that the spirit etherealised and released by fire is thus enabled to rejoin the sacred dead in a special heaven of their own. But this generalisation, attractive though it may seem, hardly covers the whole ground. The value of the evidence from the Dravidian people in this chapter of ritual is that we find among them a distinct evolution of custom through all its successive stages. Some expose the dead, others expose certain persons only; some bury; others are in the transition stage between burial and cremation; others, again, practise water burial or combine it with cremation.

[1] Crooke, *ibid.*, ii, 93, 284, 325, 417; iii, 433.

[2] Crooke, *ibid.*, iii, 198.

[3] Crooke, *ibid.*, ii, 92; iii, 483; iv, 21. Risley, *ibid.*, ii, 88, 282. Crooke, *ibid.*, i, 128, 235, 251; iii, 260; i, 62; ii, 78 *seq.*; 416; iii, 246, 260; iii, 425; iv, 116.

[4] Risley, *ibid.*, i, 533; ii, 57.

[5] Crooke, *ibid.*, i, 107; 170; ii, 363, 476; iv, 145.

But here it is necessary to distinguish. It is, I believe, the general rule that children, among whom are included unmarried persons and those who have received no further rite of initiation, are buried, not cremated.[1] Such persons are regarded as lying under a taboo; for until a child is solemnly introduced into the tribe by the rites of hair shaving or ear piercing, both forms of sacramental sacrifice, he is regarded as a Bhût or devil, and not subject to the tribal restrictions connected with food and so on. The same rule applies to those who perish through infectious disease, snake bite or leprosy.[2]

Combined with this taboo and very closely connected with it is the rule under which priests, ascetics, spirit mediums, elders or men of eminence, are, as a rule, interred, not cremated. Such persons, if their bodies be preserved, are likely to transmit to their survivors in whose neighbourhood they lie their mystic powers, piety, and other virtues. Thus, among the Maghs, the bodies of priests and persons of high social position are dried, embalmed, and kept for a year, after which they are solemnly cremated.[3] The Thârus bury their eminent dead in the house, as the Vaishnava ascetics do.[4] The Bishnois bury in the family cow-pen.[5] Among the Kanjars the spirit medium of their tribal god Mâna is always buried.[6] The Gusâins, a sect of Saivite ascetics, are buried, and the grave is filled with salt.[7] But these rules are constantly subject to modification. Thus, the method of disposing of the dead among the Gonds has changed in quite modern times; their elders are cremated, and their women, who, as is common among many savages, are conceived as subject to taboo, are buried. The old custom of house burial has recently been superseded by the use of a tribal cemetery.[8]

One of the earliest forms of disposal of the dead shows itself in the case of the Musahars and many of the lower jungle races, who simply fling the corpse away in the forest or do so after only the most hasty and incomplete cremation.[9] The Mâlês of Bengal expose in the jungle those who perish of snake-bite or other violent death, the belief being that such persons are taboo and their ghosts likely to prove malignant, in which case it is usually deemed expedient for the survivors to abandon the neighbourhood, permanently or for a time.[10]

It is a further development of the same idea which causes some of these tribes to dispose immediately of the corpses of those who die in a state of taboo and to perform their obsequies after a certain time when the taboo is supposed to be removed. Thus, among the Kaseras those who die a violent death are at once thrown into water, and cremated in effigy six months after death.[11] So with the Audhiyas, who fling into water the bodies of those who die by drowning or other

[1] Risley, *ibid.*, i, 94, 231, 499, 535. Crooke, *ibid.*, i, 7.
[2] Risley, *ibid.*, i, 510, 499; ii, 206. Crooke, *ibid.*, i, 7.
[3] Risley, *ibid.*, ii, 34.
[4] Risley, *ibid.*, ii, 318, 342. Crooke, *ibid.*, iv, 394.
[5] Crooke, *ibid.*, ii, 124.
[6] Crooke, *ibid.*, iii, 143.
[7] Crooke, *ibid.*, ii, 469.
[8] Crooke, *ibid.*, ii, 435
[9] Crooke, *ibid.*, iv, 28.
[10] Risley, *ibid.*, ii, 59
[11] Crooke, *ibid.*, iii, 170.

accident, poison, cholera, small-pox or leprosy, and within a year cremate them in effigy, a rule which also prevails among the Barhais.[1]

But in most cases we find these people in a stage of transition between burial, disposal in running water or cremation. Thus, among the pure jungle-races those who are more advanced cremate; those less exposed to Hindu influence bury.[2]

Others, again, perform a very imperfect cremation and then bury, as the Bhangis do, who before burial scorch the face or hand, or like the Kanjars, who scorch the left thumb and then bury.[3] There is some evidence that a mixture of rites like these prevailed among the early European barrow-builders, and some form of embalmment combined with cremation seems to have been the rule at Mycenæ; but the best authorities appear to agree that if the early Greeks adopted cremation it was done only in a very imperfect way.[4]

We also find among some of the Dravidian races the custom of disposing of the corpse in running water, which does not seem to be an Âryan rite, and its appearance among the Gusâin ascetics seems to point to their adoption of some indigenous practices.[5] Others, again, like the Musahars,[6] combine cremation with disposal by water, and this has been adopted by modern orthodox Hindus, who collect the bones at the pyre and subsequently fling them into some holy stream.

Lastly, we have cases in which all three modes of disposing of the corpse are adopted. Thus, among the Aheriyas the richer people cremate, the poorer bury or fling the corpse into water; Doms cremate, or bury, or scorch the corpse and throw it into water; the Hâbûras cremate, or bury, or fling into water or expose in the jungle.[7] Even among orthodox Hindus the three methods are adopted; babies they bury; from babyhood till marriage or initiation they use water burial; adults they cremate. We may therefore conclude that various converging strains of influence have combined to establish the current forms of death rites.

One very common method of guarding against the evil influences of persons in a state of taboo is to bury the dead face downwards, to fill the grave with thorns, to pile a heavy cairn over the remains.[8] With all Dravidians the order of burial is to lay the head to the north and the feet towards the south, the land of the dead, a belief which may have been borrowed from them by the Hindus. Even a more primitive rule is found among the Kabîrpanthi Rautiyas of Bengal, who bury the dead standing, of which there are instances in European tradition, as in

[1] Crooke, *ibid.*, i, 90, 194.

[2] Crooke, *ibid.*, ii, 284 (Dharkârs); iii, 332 (Korwas); iii, 433 (Majhwârs); *Central Provinces Gazetteer*, 49 (Korkus). Crooke, *ibid.*, iv, 393 (Thârus). Risley, *ibid.*, i, 62 (Banwârs); *ibid.*, i, 81 (Bauris); *ibid.*, i, 136 (Binjhiyas); *ibid.*, i, 299 (Goriyas), *ibid.*, i, 510 (Koras); *ibid.*, ii, 244 (Savars). Crooke, *ibid.*, i, 286 (Bhangis).

[3] Crooke, *ibid.*, i, 286; iii, 144.

[4] Schuchhardt, *Excavations*, 162 *seq.*; 296, 325 *seq.*

[5] Crooke, *ibid.*, iv, 28 *seq.*; ii, 471.

[6] Crooke, *ibid.*, iv, 29.

[7] Crooke, *ibid.*, i, 44; ii, 325, 476.

[8] Risley, *ibid.*, i, 81, 231, 248, 510. Crooke, *ibid.*, i, 44; iv, 66.

the well-known case of Rare Ben Jonson.[1] We find, again, among the Sannyâsi ascetics a survival of the practice common among other savages of burying the dead in a cramped sitting position, which symbolises the posture of the child in the womb of its mother.

I have, thus, at a length which may, I fear, be considered excessive, endeavoured to bring before you some considerations which may attract your interest to a race which possesses no historical annals, and which has secured little attention from Englishmen. But particularly from an administrative point of view, they are a people of no little importance. Not only does the Queen-Empress rule sixteen millions of pure Dravidians, a population as large as that of Spain, but Southern India has been in the main peopled by them, and, as I have attempted to show, they form a large element in the population of the northern part of the Peninsula, in many respects the most valuable and interesting part of the Empire. It is on the development of this race that our tenure of India mainly depends. Englishmen in India will always continue to form a garrison pledged to maintain the peace, and a small body of administrators whose task it is to develop the resources and train the native races to take their place in the government of the country. But the Englishman cannot live and multiply among the rigorous surroundings of a tropical climate. It is a remarkable but melancholy fact that there is not, I believe, a single lineal descendant in the third generation of the original settlers alive at the present day. The progress of agriculture, which must always remain the leading Indian industry, mainly depends on the Dravidian race.

Hence the study of this people is obviously one of great importance. And in closing, I may venture to suggest that this Institute might be well advised to suggest to the Indian Government a more extensive ethnological and anthropometrical survey of them than has been hitherto attempted. We need one general survey extending through the Peninsula from the shores of the Indian Ocean to those of the Bay of Bengal, and linking together in one well organised scheme, the Bhîl of the West with the Gonds of the Central Provinces, and the Kol, Kharwâr, and Santâl of the eastern portion of the plateau. If I have succeeded in showing that the ethnologist and student of primitive sociology has something to learn from an investigation of these races, my aim in writing this paper will have been fully attained.

[1] Risley, *ibid.*, ii, 205. Crooke, *ibid.*, iv, 275; Wheatley-Cunningham, *London Past and Present*, iii, 473.

ORDINARY MEETING.

DECEMBER 6TH, 1898.

F. W. RUDLER, Esq., F.G.S., *President, in the Chair.*

The Minutes of the last Meeting were read and signed.

The PRESIDENT announced that C. J. TABOR, Esq., had been elected a Fellow of the Institute.

The PRESIDENT introduced the Rev. H. N. HUTCHINSON, who exhibited and explained his collection of ethnological photographs and read a paper on the subject.

The PRESIDENT thanked Mr. Hutchinson, and exhibited a photograph of an aged Kaffir chief, that had been presented to the Institute by Miss Buckland.

He then called upon Professor RUPERT JONES to read two papers, one by George Leith, Esq., of Pretoria, "On the Caves, Shell Mounds, and Stone Implements of South Africa," and the other by M. E. Frames, Esq., "On worked flints from Griqualand-East."

Discussion on these two papers was carried on by the PRESIDENT, Mr. NICOL BROWN, Mr. W. Y. CAMPBELL, Mr. FRANK SHRUBSALL, Mr. JOHN BALLOT, Rev. ASHINGTON BULLEN, Mr. A. L. LEWIS, Mr. G. M. ATKINSON, Dr. WOODWARD, and others.

A vote of thanks was passed to Mr. Leith and Mr. Frames for their papers, and to Professor Jones for reading them, and also for exhibiting a collection of flint implements in illustration of the communications.

SUGGESTIONS FOR FORMING A COLLECTION OF PHOTOGRAPHS FOR THE ANTHROPOLOGICAL INSTITUTE.

By Rev. H. N. Hutchinson, B.A., F.G.S.

In this communication Mr. Hutchinson pointed out the exceptional opportunities for collecting photographs, which were enjoyed by our anthropologists in consequence of the vast extent of the British Empire, and expressed his regret that we do not possess a collection in any respect worthy of the country. Such a collection as he desired to form would be useful not only to students of anthropology and ethnology, but also to many artists, authors, and publishers of illustrated works who might desire from time to time to consult photographs of human types, dress, weapons, etc.

In order to obtain the photographs, he advised that circulars should be sent to professional photographers, offering to purchase suitable subjects, and to the photographic societies all over the world, soliciting their co-operation. The collections at Oxford and Cambridge and at the principal missionary societies, as well as those in private hands, should be examined, and a selection made. It would also be desirable to send an agent to visit the principal ethnographical museums on the continent, with the view of securing illustrations.

All the photographs should be mounted on boards of uniform size, and as much information as possible given in type-written slips pasted on the mount. The photographs with other anthropological illustrations, such as lithographs and half-tone process-prints, should be classified according to race and country, and the whole series arranged in drawers or boxes. Each illustration should, of course, be numbered and registered in a catalogue of the collection.

Mr. Hutchinson had recently been engaged in forming a collection of anthropological photographs to illustrate a popular work on ethnology which he hopes to publish soon; and for this purpose he had visited Paris, Leyden, Hamburg, Berlin, Dresden, and Leipzig. But the collection for the Institute ought to be on a very much larger scale, and would entail a considerable outlay. He therefore urged that a strenuous effort should be made to raise a fund of £500 for the purpose of forming such a collection as should be thoroughly typical and worthy of the Institute.



STONE IMPLEMENTS FROM GRIQUALAND-EAST.

ON SOME STONE IMPLEMENTS FOUND IN A CAVE IN GRIQUALAND-EAST, CAPE COLONY.

By Minett E. Frames, Esq., Johannesburg. (Communicated by Professor T. Rupert Jones, F.R.S., Hon. Memb. Anthrop. Inst.)

[with plate xvi.]

[The author prefaces his description of the cave with remarks on stone implements in general. With regard to those of South Africa, he regrets he has met with very little descriptive literature, Mr. E. J. Dunn's memoir in the *Trans. Philosoph. Soc. of South Africa* being the only account of them known to him.]

The cave to which I wish to draw attention occurs on a farm named "Curragh," on one of the spurs of the Drakensberg, and close to the Umdowaan River, the boundary-line between Natal and Griqualand-East. This cave, or rather rock-shelter, has been formed by the weathering away of a sandstone-and-shale-breccia, leaving an overhanging ledge and a floor of hard sandstone. These shale-breccias invariably weather away first, especially when the shale is abundant in the rock. When one of these hollow shelters is found with water in the immediate vicinity, it is sure to show signs of having been inhabited at one time or another. Over the ledge-roof of the Curragh Cave, a stream of water falls clear of the floor and partly obscures the entrance. The dwellers in these caves probably inhabited only those that had water close at hand, as they do not appear to have had vessels to carry it in, and possibly they had to stand an occasional siege by an enemy.

This cave was twice inhabited. The record of the last dwellers is easily deciphered. They built three semi-circular walls across the entrance to add to the comfort of the abode; and these walls have been ornamented with a somewhat artistic design, picked out with clays of various colours in broad and narrow bands. The style of ornamentation and the type of architecture are distinctly characteristic of the Basuto nation. The inhabitants of the district informed me that Basutos did live in this particular cave, and that before them it was inhabited by Bushmen. The Basuto family, on taking possession of the cave, swept it out, and threw the rubbish right in front of the cave under the miniature waterfall, where I found it still lying in an undisturbed heap.

Some paintings on the wall of the cave are evidently the work of the Bushmen, with whom the eland was a favourite subject of their art. These appear to be ancient, and, though in sheltered parts of the cave, have a worn aspect. There are

eight representations of the eland, and one crude painting of an elephant. Two shades of red were used—one, a dark colour, seems to have been used for the back and sides of the eland; the lighter for the belly, legs, neck, and head. The Basuto, who had taken possession, endeavoured to portray an eland from a Basuto point of view, the result being a nondescript kind of animal—anything between a greyhound and a giraffe.

The roof of the cave is blackened with smoke, the fire having been made inside; but it is probable that in the summer months the fire was made outside. The immediate vicinity, however, is overgrown by grass and shrubs, so that in the limited time at my disposal I was unable to find the spot where the ashes and the kitchen-midden stuff were thrown.

Amongst the rubbish that had been swept out of the cave, the stone implements now exhibited were found, together with various fragments of rocks. Some of these showed that they had been chipped, and more than 75 per cent. were foreign to the neighbourhood. The majority of the implements and associated fragments were what I take to be black cherts and lydianized shale, with a small percentage of a dense, fine-grained basaltic rock, and a peculiar grey rock used for some implements. Amidst the heap small flakes of quartz and jasper were also found, but have been lost since. Some of these, I think, are arrow-tips, such as are alluded to by Mr. E. J. Dunn (*Trans. Philosoph. Soc. of South Africa*, vol. ii, 1880, p. 15).

It is probable that some of the implements forwarded with these notes represent types used only in the cave-house by the women in dressing skins and manufacturing spear and arrow-shafts, and also in working into shape the digging-sticks and others, such as knob-kerries, whether of wood or rhinoceros horn.

Another shelter, called the "Bristol Cave," lies about four miles north of the Curragh Cave, and these are forty miles N.W. of the town of Kokstadt, in Griqualand-East; both lie at the foot of the Drakensberg. In the Bristol Cave only a few implements were found, and they could be matched with specimens from the Curragh locality. At this latter place the heap of rubbish was only partly examined, for my time was limited, and the water fell on my back very unpleasantly on that cold winter's day. But my friend, Mr. F. R. MacDonald, who has become a keen hunter of these implements, and has promised to carefully search the heap and locality, will forward to me, from time to time, the results of his labours.

We found very many fragments of implements, broken probably in use, but, of course, selected only those that were less damaged. I expect that it will be noticed that some have been twice chipped. The last chipping is apparently of recent date, judging from the freshness of the chipped faces. I do not think that the recent workmanship was due to the Basutos, because these particular specimens were found in the undisturbed heap of old sweepings, and in some instances at the bottom of that heap. It is possible that the earlier occupiers of the cave got some of their implements whilst foraging among the haunts of their enemies, or stole

them from friends elsewhere, and then chipped them in the manner considered best suited for some special object.

Some of the specimens look water-worn, as if taken from the bed of a river; but the smoothing may have been due to long-continued use.

Some of the rounder pebbles had been used as mullers, for grinding roots and herbs, and probably locusts; they showed signs of usage by one or more faces having been worn down. There were also smooth pebbles, flat on one side and rounded on the other, used probably for throwing at birds and small game. This shape is very well adapted for such purpose, and we know that the Bushman was very expert at stone-throwing; so that he probably carried a supply of these when in the field, and kept a reserve for cases of emergency in his cave-home.

The diminutive size of the implements herewith forwarded supports the view that they belonged to the pigmy Bushman, and, from the evidence before us, it is certain that they neither belonged to, nor were used by, the Basutos.

Notes by Professor T. Rupert Jones on the Specimens Exhibited by Mr. Minett E. Frames.

Having been asked by Mr. Frames to prepare his paper for presentation to the Institute, and to make a critical examination of the stone implements forwarded with it, I here append my notes on these specimens, in the order in which they can be conveniently arranged according to their shapes. The numbers on Mr. Frames's labels are preserved (1–30).

All are made of ordinary flakes (except two, not accepted as tools), and are dressed by chipping on one face only. The specimens consist of a black metamorphic siliceous rock (lydite), except Nos. 22–25 (chalcedony), and Nos. 1, 10, 26, which are of a drab-coloured siliceous rock weathering brown.

Nos. 19 and 20. Triangular ridge-flakes. Compare Figs. 9 and 7, in E. J. Dunn's Plates 1 and 2, *Trans. Phil. Soc. S. Africa*, vol. ii (1880), pp. 14 and 15. [Fig. 1, No. 20.] The edges once sharp have been smoothed by long usage.

No. 16. Thin flat flake of a grey and mottled siliceous shale, with a portion of the old, weathered, brown surface of the original stone. The curved edge has been trimmed to sharpness by chipping, as "a serviceable knife" (Mr. Frames). [Fig. 2, No. 16.] Knife-like implements, the author considers to be abundant over widely separate areas in South Africa, but he thinks that the majority of the implements from the Curragh Cave have not been previously noticed.

Nos. 21, 7, 27, 24, 22. Portions of ridge-flakes; blunt at both ends.

21. Compare Dunn's Fig. 5, p. 13. Scraper. Edges and ridge somewhat smoothed. [Fig. 3, No. 21.]

7. Compare Dunn's Fig. 1. Much smoothed by handling and wear all over the ridges, edges, and surface.

27. Compare Dunn's Fig. 5. One end roughly chipped to a semicircle. Brown chalcedony.

24. Compare Dunn's Fig. 5. Chalcedony, grey and brownish. One end has had its edge crushed.

22. Compare Dunn's Fig. 5. Impure chalcedony, with some old weathering on the thick edge. Dressed or used on one edge.

Nos. 25 and 23. Short pieces of flakes, dressed by chipping on the convex face.

25. Dull white chalcedony. Thick and suboblong.

23. Dull grey chalcedony (like flint). Thick suboval. Used on the curved edge and on the blunt end. [Fig. 5, No. 33.]

No. 12. Probably a small "waster." Smoothed however on the edges.

Nos. 13, 14, 15. Rather large flakes, rounded at one end, and chisel-shaped at the other.

13. Chipped at the rounded end, along one side, and into an ogee, gouge-like curve at the other end. A large patch of thick, old, brown weathering is present on one face.

14. Long-oblong, rounded at one end; chipped along one edge, and across the other end obliquely. [Fig. 7, No. 14.]

15. Roughly shaped; subacute at the bulb-end, nearly straight on the two edges, and coarsely chipped to a blunt straight edge at the other end A portion of the old, thick, brown weathering (like "mountain-cork") remains on one face.

No. 17. Somewhat elegant in outline, nearly fusiform, or rather fish-like; dressed carefully to a narrow not quite symmetrical shape, sharp at the ends, and convex on one face. Compare Dunn's Fig. 10, which is much better finished and more rhombic in shape. [Fig. 6, No. 17.]

No. 28. A suboval, concavo-convex stone, somewhat like a thick hollow, subacute spoon, of granular felspathic (not calcareous, nor siliceous) kind of rock. Probably part of an outer coating of some weathered nodule.

Nos. 8, 30, 11, 1, 2, 3, 5, 29, 6, 4, 9, 10, 26. Draw-shaves, side-scrapers, or stick-shaves. Pieces of irregular flakes, more or less hollowed on one, two, or three of the thin edges by chipping and by use into semicircular notches, probably for sharpening the points of weapons of wood and bone; and for shaping and smoothing shafts for spears and arrows, and sticks for bows, and for digging, fighting, etc. In some cases, the elongate shape (as Nos. 1, 2, 3) allows of the supposition (Mr. Frames suggests) that the implement may have been held by the first finger and thumb in skinning an animal, and subsequently for removing the fatty material from the skin, preparatory to dressing it. In the further preparation by rubbing and smoothing the skin some of the other implements have received the smoothly-worn aspect that their edges present.

Nos. 8 and 30 are comparable with Dunn's Fig. 3, p. 13. The smoothings of the *old weathered portion* may have been due to ancient water-action

in No. 1, as an old river-stone; so also Nos. 26 and 10. Some of this group are quite analogous to specimens from the plateau-gravel of Kent, collected by Mr. B. Harrison, of Ightham.[1]

In the *Journ. Anthrop. Inst.*, vol. xi (1881), in Plate XXX, Figs. 6A and B, are shown two faces of a flint-tool, of an analogous type, for scraping and shaping sticks. This specimen General Pitt-Rivers picked up at Gebel Laha-Mare, in Egypt, and describes as a "Hollow scraper for planing round surfaces." Many specimens of such hollow-edged and crescentic flint implements ("*croissants concaves*") from the gravel of the Seine in the Paris basin, and others from the Vallée du Grand Morin, are figured in Plates 3, 4, 13 and 14 of M. A. Thieullen's memoir entitled *Les véritables instruments usuels de l'age de la pierre.* 4to. Paris, 1897.

8. Side-scraper. Rough flake, sub-oblong, broadly and deeply hollowed by rough chipping on one edge. Ends approximately equal. Edges partially smoothed. (A small analogue is published by Capt. Hutton, in the *Trans. New Zealand Institute*, vol. xxx (1897), Plate XIII, Fig. 3.)

30. Side-scraper; though smaller, characteristically analogous to No. 8. [Fig. 8, No. 30.]

Nos. 11, 1, 2, 3. Side-scraper, elongate forms with hollowed edges. Some, smoothed by wear and handling.

11. Small, thin, curved flake, chipped with some care.

1. This has two broad, and one small, crescent hollows. Drab-grey siliceous rock, with much of the old, smooth, thin, brown weathering remaining on the ridge-face.

2. Thick, narrow, elongate (axe-like) specimen, deeply and broadly hollowed on two edges. Thin and wide at one end; truncated at the other; partially smoothed.

3. Somewhat fiddle-shaped; strongly hollowed on one edge. Smoothed all over.

Alluding to Nos. 1, 2, and 3, Mr. Frames particularly states: "With regard to the use of stones in skinning, I myself saw a Griqua, in Griqualand-East, though possessed of an excellent knife, use a stone. This he did by grasping the skin in his left hand, and with his right hand he vigorously inserted the stone between the flesh and the skin, and removed the latter at a rapid rate."

No. 5. Side-scraper sub-triangular; the straight edge has been dressed on the flat face; the other edge has been hollowed out towards the broader end on the ridge-face. All the surface and edges are very much smoothed, probably worn down by use [Fig. 4, No. 5]. An analogue from Shetland (?) is figured on

[1] *Quart. Journ. Geol. Soc.*, vol. xlv (1889), pp. 270 *et seq.*, Plate XI; and *Journ. Anthrop. Inst.*, vol. xxi (1892), pp. 246–276, Plate XX. See also Sir Joseph Prestwich's memoir on the "Primitive Characters of the Flint Implements of the Chalk Plateau," Collected Papers, etc., 1895, pp. 49, etc., Plates I–XII.

page 9 of the *Catal. Nat. Mus. Antiq. Scotland*, 1892. In the *Journ. Anthrop. Inst.*, vol. xi (1882), Mr. W. D. Gooch, described some South-African flakes with rounded notches worked in them. One such "Notched scraper, for trimming and rounding arrow-shafts," is described in his exact and comprehensive paper (pp. 124–183), on the Neolithic age, etc., in South Africa, and is figured in Plate XIII, Figs. 1 and 2.

Regarding what are here termed side-scrapers and stick-shaves or draw-shaves, Mr. Frames remarks that "a portion of the edge, chipped or worn out in a more or less semicircular hollow, is characteristic; and this hollow was intended for some special purpose, especially as the edge is often much worn. No. 5 may have been used as a knife at first, but the edge and surface have been further worn down by wear and use as a rubber or polisher, perhaps of sticks, or of soft material, as in dressing skin."

Nos. 29, 6, 4. Side-scrapers, stick-shaves or draw-shaves, pieces of flakes, much and roughly dressed. These have three crescentic hollows on the edges, like many of the well known plateau-flints of Kent.

29. Side-scraper. A piece of a flake of a drab siliceous rock, retaining some of its old, brown, smooth weathering on the surface. Dressed to a roughly polygonal outline, three sides of which form a broad blunt projection. [Fig. 9, No. 29.]
6. A somewhat similar polygonal implement with three boldly curved notches.
4. Irregularly sub-quadrate, with three broad notches.

No. 26. Sub-triangular piece of flake of a drab-coloured siliceous rock; with portions of the old, smooth, brown weathered surface. It has been chipped on three edges into a triangular projection somewhat like a broad blunt rimer, or three-sided scraper.

Nos. 9, 10. Shoulder-scrapers or stick-shaves. Parts of flakes dressed and worn away so as to have two semicircular hollows, symmetrically placed and parallel with a projection between them, like a coarse blunt rimer. Both are much smoothed by use and wear. Quite analogous to many plateau implements of Kent.

9. Triangular, with two broad sub-parallel notches and a sharp projection between them. Of the usual black, siliceous, metamorphosed shale (lydite). [Fig. 10, No. 9.]
10. Polygonal, with the two broad notches by side of the projection. Piece of a rough flake of greyish-drab siliceous rock, retaining some of an old, smooth, brown weathering, and elsewhere embrowned by a later weathering, except at a recent fracture.

No. 29. A small tadpole-like piece of weathered or water-worn sandstone, not at all likely to have been an implement.

Mr. Frames also found in the Curragh district two of the large round perforated stones, used as make-weights on "digging-sticks," but they were broken. Such implements are rather plentiful in some parts of South Africa, and have been well described by Mr. E. J. Dunn, in the *Trans. Phil. Soc. South Africa*, vol. ii, (1880), pp. 20–22, Plate 4, Figs. 25, 29, 30. See also Dr. Dale's paper in the *Cape Monthly Magazine*, October, 1870. In the *Journ. Anthrop. Inst.*, vol. xi (1881), p. 129, Mr. W. D. Gooch also alluded to these round implements, or "digging-stick weights" as having probably been originally intended for "club-heads."

Explanation of Plate XVI.

Stone Implements from a Bushman Cave in the Curragh Farm, Griqualand-East.

Fig.	1.	No.	20	of Mr. Frames's collection.		Triangular ridge-flake.
„	2.	„	16	„	„	Flat flake, dressed on one edge.
„	3.	„	21	„	„	Oblong piece of ridge-flake.
„	4.	„	5	„	„	Triangular ridge-flake, notched on one edge, and worn smooth all over.
„	5.	„	23	„	„	Piece of thick chalcedony flake, dressed on one face.
„	6	„	17	„	„	Flake dressed on one face and the edges to a sharp point at each end.
„	7.	„	14	„	„	Oblong flake, dressed at one end and on the edge.
„	8.	„	30	„	„	Piece of flake, hollowed on one edge.
„	9.	„	29	„	„	Irregular piece of flake, hollowed on three of its thin edges.
„	10.	„	9	„	„	Triangular piece of flake, hollowed on two of its thin edges, leaving a blunt point.

ON THE CAVES, SHELL-MOUNDS AND STONE IMPLEMENTS OF SOUTH AFRICA.

By George Leith, Esq., of Pretoria. (Communicated by Professor T. Rupert Jones, F.R.S., Hon. Memb. Anthrop. Inst., etc.)

[with plates xvii and xviii.]

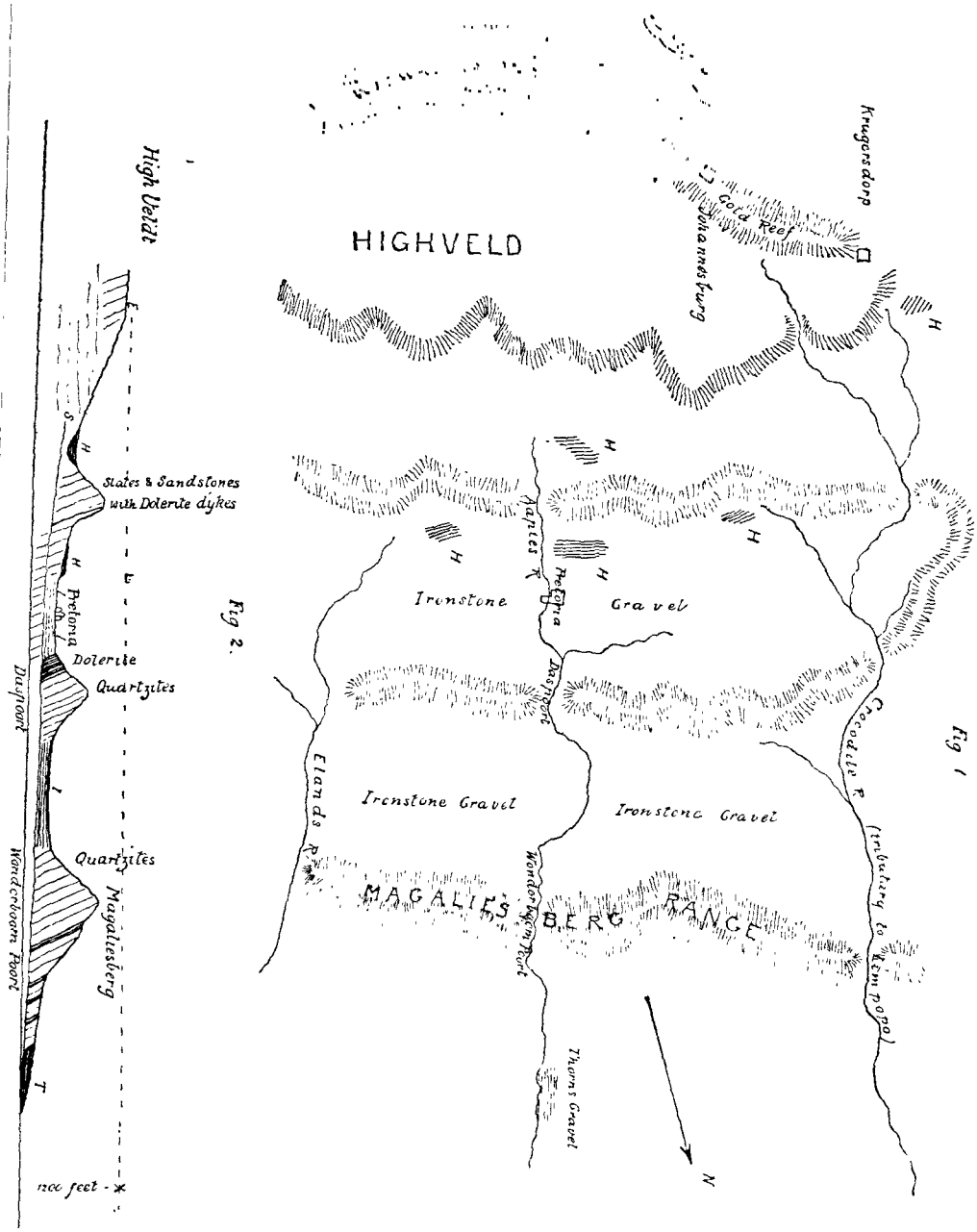
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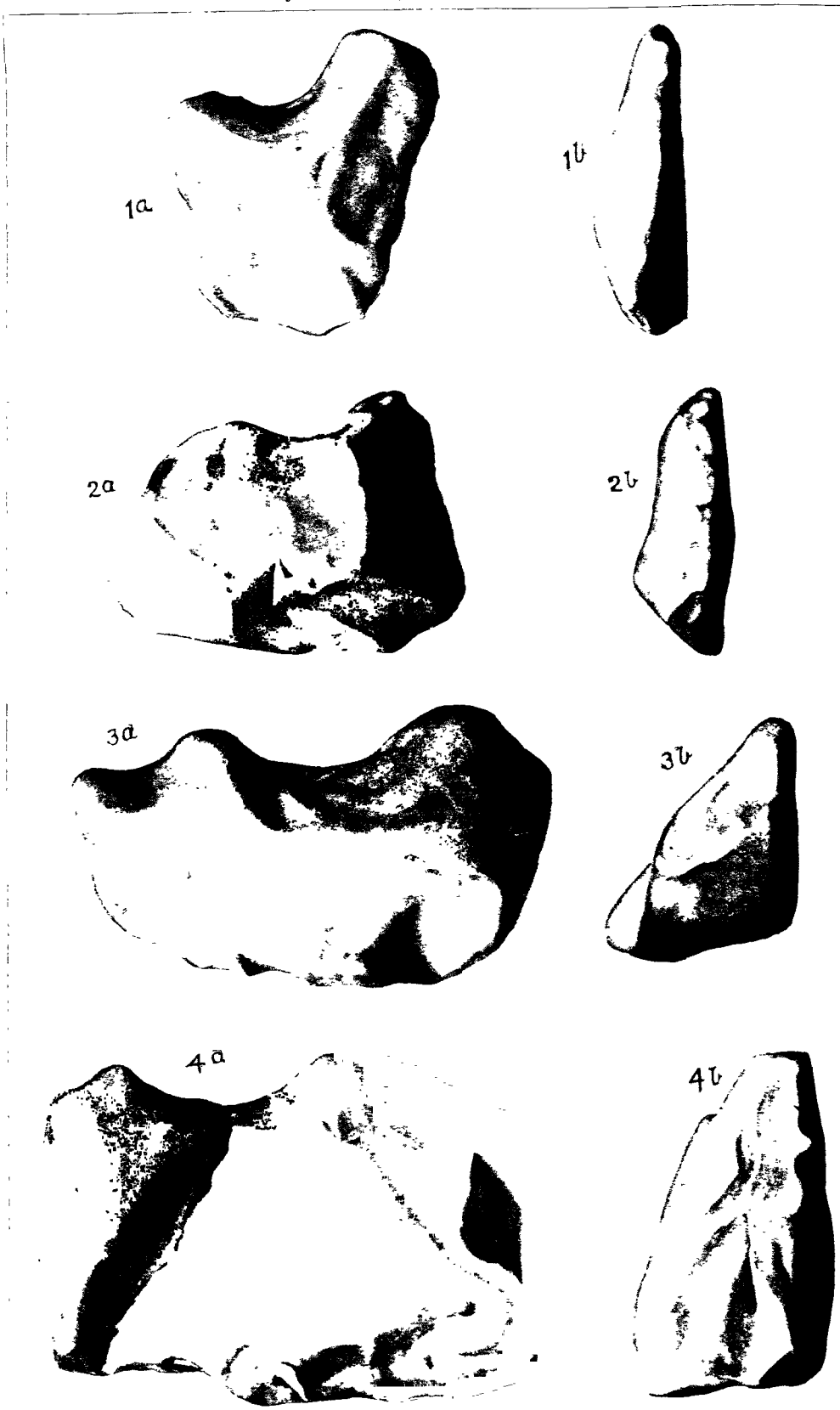
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§ I. *Caves in the Stormberg.*

In the beginning of 1886 I had the good fortune at Burghersdorp—a village on the northern slope of the Stormberg in Cape Colony—to make the acquaintance of Dr. Daniel Kannemeyer, whose contributions to palæontology have been neither few nor small. In one of his very few leisure hours he took me to the base of a "Krantz" or precipitous rock, hemming in the village on one side. He showed me at several spots the defaced remains of Bushmen paintings on the overhanging quartzite rocks, and showed me also, in the talus of refuse in front of these recesses, the handiwork of their former occupants. These were chiefly flake implements of the well-known scraper type, made of a highly indurated black shale, and showing on one side in every case the bulb of percussion, which archæologists have come to regard as the "trade-mark" of primitive humanity. The subject had a great attraction for me, and in subsequent visits with the doctor to cave-shelters in the Stormberg Mountains, remote from the present haunts of men, we came



SKETCH-MAP AND SECTION OF THE NEIGHBOURHOOD OF PRETORIA.



"EOLITHS" FROM PRETORIA.

upon strongholds and hiding-places where the mullers that had ground the snuff, the grinding stones for the paint, the flaking hammers, and the flake implements that had just been made, were lying as they had been left by the Bushmen in their haste to escape their enemies. I could not fail to recognise that here we were on the hot spoor of a vanished race, that we had just missed seeing in their native haunts a race that, in South Africa at least, links the present with the dim ages of the past. In after years I visited many of these cave-shelters; and, if I describe one, I describe the haunt of the Bushman wherever I have found them. A precipitous cliff, overhanging its base by 5, 10, or 15 feet, the floor of the recess from 50 to 500 feet above the level of the spruit or stream that almost invariably flowed near by, and commanding a wide view of the surrounding country. Immediately in front of the cave or recess, a steep talus of rubbish, fragments of rock, wood-ash, charred ends of sticks, and such like, extending downwards into a thick growth of tangled brushwood. Occasionally the brushwood had grown so as to hide the cave and to obscure the view from it; this growth may have come there since the haunt was untenanted; for, as a general rule, the Bushman liked to see about him. The talus served, too, as a kind of glacis, across which few of his enemies would venture to face his poisoned arrows. Not long ago I made the acquaintance of a Dutch farmer who had served on the Commando that exterminated the last horde of Bushmen in the Stormberg, and he assured me that they were very chary of attacking the Bushmen in their strongholds. He told me that the universal wear among the frontier farmers of that day was a kind of felted cloth, called Duffel, in preference to its being linen, because it stopped Bushmen arrows better even than the Vel-brocken or leather breeches ordinarily worn. Without a doubt then, the Bushman represents Neolithic man in South Africa, and any investigation into the habits of prehistoric races in South Africa should begin with him and work backwards.

The chief weapon of the Bushman, wherever he is still to be found, is the poisoned arrow. Into the unfeathered shaft of reed he fitted about 4 inches of bone, either ground to a fine point, or tipped with a triangular piece of iron, and dabbed over with poison. But there was a time when the Bushman tipped his shafts with flakes of agate, jasper, lydite, quartz, or quartzite, the best he could get. Blunt though it may have been, the force with which the arrow was driven home, and the deadly poison with which it was smeared, made it effective enough. Stone arrow-tips, however, are extremely rare; and, so far as I am aware, they are never barbed. There are, it is true, in the Museum at Bloemfontein three very small arrow-heads of chalcedony, showing traces of having been barbed, and said to have been found in a Bushman resort, near the Caledon River; but until more of the same type are forthcoming, the existence of barbed stone arrow-heads in South Africa is not sufficiently established. In the mountain haunts of the Bushman the "scraper" is the implement most in evidence. A score of these may be found as against a single knife-shaped implement or arrow-tip. So far as I am aware, no scraper has ever been found in a handle. The precise use of the "scraper" among

primitive races I leave others to determine[1]; suffice it to say, that it is the neolithic implement most abundant in South Africa. Occasionally in the talus of a Bushman cave,[2] but more frequently in the open veldt, we find very fine knife-shaped implements, like some of those in Plate III[3]; and corresponding with the long skinning-knives of the Coast region, shown in Plate I.[3] For the rest, we find in or near a Bushman's cave his muller, or grinding stone, his pounding stones and flaking hammers; one piece of grooved sandstone for straightening reeds for his arrow-shafts, and another for grinding down their points. We find bone needles and drills, rimers and polishing stones—everything, in fact, that was necessary, as an auctioneer would say, in a well-appointed Bushman household. The celt or stone axe is not generally found either in the cave or in the talus, but usually lying exposed in the open veldt at no great distance from a cave-shelter, much in the same way as the perforated stones (see Plate XII[3]) in a district that has been occupied by Bushmen are generally found in or near the eye of a fountain, or in the neighbourhood of ancient game-pits.

§ II. *Caves at Mossel Bay.*

In thus following up my first introduction to archæology, with much later investigation of Bushman haunts and relics, I have passed by another field, where the impulse I had received during my short stay in Burghersdorp found fuller scope. From Dr. Kannemeyer I caught the infection, and the pleasant malady appeared in a stronger form eighteen months afterwards, when I went to reside at Mossel Bay, a small seaport half-way between Cape Town and Port Elizabeth.

(1.) The rocky headland that forms the south-western horn of the bay is known as Cape St. Blaize. Immediately below the lighthouse that crowns the promontory, the sandstone rock recedes inwardly, forming a semi-circular recess or cave, with a radius of about 15 feet. When I first visited the cave, some years previously, the floor was level. The dark soil of sand and wood ashes was littered with the shells of large edible molluscs, fragments of stone from the roof, flakes of quartzite, broken bones, and sea-worn pebbles. It could only be reached by

[1] In the description of Plate A, XXXIV, in Christy and Lartet's *Reliquiæ Aquitanicæ*, it is stated that "The applicability, and indeed actual use, of the round-ended flakes, called 'scrapers,' 'thumb-flints,' and 'finger-flints,' for striking a light with a piece of iron-pyrites, has been clearly illustrated by Mr. [now Sir] John Evans, F.R.S., and the Rev. Canon Greenwell." It is also said that a spark has been produced by two flints and caught on suitable material, such as dried moss.—T. R. J.

[2] Mr. E. J. Dunn also refers to the heaps of *débris* at the Bushmen Caves, and their contents of ashes, charcoal, bones of game, bits of pottery, stone implements, and pieces of stone, *Trans. Phil. Soc. of South Africa*, vol. ii (1880), p. 12; and Mr. W. D. Gooch refers to these and other sources of stone tools in his excellent memoir on the Stone Age, particularly the Neolithic period, in South Africa, in the *Journ. Anthrop. Inst.*, vol. xi (1881), pp. 124–183.—T. R. J.

[3] The author's MS. was accompanied by eleven out of twelve numbered photographic plates, each crowded with the implements found by him; but the absence of a scale of measurement lessens their value. As these plates will be kept in the Institute's Library, references are made to them wherever practicable in this paper.—T. R. J.

scrambling up a very steep talus of rubbish, at the risk of slipping downwards into deep water, or from the top by a still more dangerous path. The mussels on the rocks immediately below, the abundance of which is said to have given the bay its name, supplied the tenants of the cave with food, and a drip from the roof supplied the water. It was a very Gibraltar for defence, and, as events showed, a very Birmingham for industry. The cave, by the way, is described by the travellers Lichtenstein and Sir John Barrow. The latter, noticing the quantity of large shell-fish in the refuse on the floor, concluded that they had been carried up there by birds addicted to a molluscan diet. First conclusions on such subjects, however, are seldom correct; and this one of the famous African traveller was no exception.

On my second visit to the Lighthouse Cave I found that a great change had taken place. So much of the rock had been quarried for building purposes that access to the cave had become easy,—so easy, in fact, that farmers and towns-people had sifted out a great deal of the cave-earth, and carried it away as manure for their gardens. Heaps of the siftings, consisting chiefly of quartzite chips, shells, bones, and fragments from the roof, were lying in the cave, while cartloads had been thrown over the edge into the sea. Here and there, however, especially near the outer edge of the semi-circle, considerable masses of deposit were still undisturbed, and to these I at once directed my attention. There, where the roof was only a foot or two high, the bulk of the lumpy rubbish seems to have been thrown, so that the deposit consisted almost exclusively of shell *débris*, pebbles, fragments of rock, chips and flakes of quartzite, and fractured marrow-bones. The centre of the cave had been the hearth, and the deposit consisted largely of wood-ashes, charred bones, and other matter so rotten and ill-smelling as to justify its use as manure. In the undisturbed part of the deposit, I found very fine skinning-knives of quartzite, some of them 5 or 6 inches long, and as thin as a shilling. The number of perfectly formed implements, however, bore a very small proportion to the number of broken implements and mismakes, certainly not one to a thousand. The prevailing type of implement was the knife-like or leaf-shaped flake implement, with two cutting edges, terminating in a sharp point opposite to the bulb of percussion. These may be classified into arrow-tips, javelin-points, club-spikes, and half-a-dozen more varieties, according as they vary in size and shape, but I regard such classifications as more or less fanciful or tentative, pending more conclusive evidence and information as to the actual purposes to which they were put. A good deal of light on this point may be gleaned by examination not only of perfect but still more of broken specimens. I notice, for example, in thin chert and quartzite knives, deep notches that must have been caused by using the implements in a fashion that one looking at the perfect implement would never have expected. In such implements as borers, rimers, and scrapers the frequent occurrence of specimens worn with use practically settles the matter, but with reference to the flake-pointed implements, the evidence as yet is very inconclusive. Early in my cave-hunting experience at Mossel Bay, I happened to find an implement of indurated black shale, and a

close examination showed its edge so carefully and regularly notched, that I concluded it was a saw, although at that time I had never heard of prehistoric saws. As a matter of fact, the only literature I had read on the subject till I left Mossel Bay was an interesting article in Cassell's *Science for All*. In that article there was a sketch of the finds in the French caves and gravels, and in the kitchen-middens of Denmark, together with illustrations of the best known types. The correspondence between the implements there figured, and those I was finding in the cave was so remarkable, that I felt encouraged to persevere in a cave-hunting hobby, which was already making me locally notorious as a hopeless crank. Before leaving the question of cave-types, I may mention another type that I came across that was not figured in the books at my disposal, but which I am told is known as "bone-splitters." The implement I refer to is shaped like one of the bevel-edged chisels used by cabinet-makers. The cutting edge is a straight line at right angles to the direction of the blow which struck the flake from the core, in other words, the line of concussion. They are ideal wedges for splitting wood (see Plate VI of photographs), but I find difficulty in imagining their being used for splitting bone, which has little or no cleavage; indeed, I would hesitate to regard them as a separate type did I not find corresponding forms still more plentiful among the flake implements found on the surface and in the gravels of the Transvaal.

(2.) While working in the Lighthouse Cave, I heard of another, known as Bland's or the Guano Cave. For twenty or thirty years (I was told) "guano" had been carted by farmers from that cave, while one or two shiploads of it had been sent even to Mauritius. Naturally I lost no time in paying a visit to such a spot. I found the entrance to the cave about 15 feet above sea-level, in a cliff about 200 feet high. The cave is reached from the top by climbing down a very steep and rocky path, at the foot of which a 30-foot ladder takes one to the entrance. As this could not possibly have been the pathway used by its prehistoric occupants, I looked about for another. I looked in vain. Nothing resembling a path was to be seen, but I noticed that by a circuitous route over bare rocks, inclined at some places at an angle of 45°, a baboon, a Bushman, or possibly a bare-footed boy at the risk of his life might reach the cave. It must have been a perfect haven of refuge for those who knew the devious and dangerous path. It is a cave in the true sense of the word. The opening is not large; but inside the roof is high, and the far end is lost in cavernous darkness. It is not given to every anthropologist to see "cave-dwellers" at home, but such was my good fortune on that occasion Stepping off the ladder, I clambered up the slope to the entrance. The scene that met my eyes I shall never forget. In the middle of the dark space, a fire of driftwood was burning, and in the light of it were sitting three Hottentots, naked to the waist, one tearing the meat off a bone with his teeth, the others busy helping themselves from a pot standing between them. As a picture of prehistoric man at home, it was complete, and it was not an illusion. Going into the cave, I

soon found that the occupants were three coloured men, bastard Hottentots from Mossel Bay, who from Monday to Saturday made the cave their home, and earned a livelihood by sifting out the so-called "guano," putting it into sacks, and selling it to the farmers who came in quest of manure. Occasionally a farmer would send three or four of his own Hottentots, a week in advance of his waggon, to get out the stuff. Quarrels frequently arose between the rival parties, neither of whom had any right there, with the result that even in recent times, dramas of a prehistoric character have there been enacted.

The cave appeared to be about 100 feet long by about 40 broad, with a roof about 20 feet above the present floor. On the walls could be seen the mark of the old floor, at least 10 feet above the present; and the Hottentots at work in the cave were sifting what seemed to be the bottom-layer of the deposit, 8 feet lower than where they sat. It was evident to me that the whole deposit had been sifted and re-sifted, and that the 10 feet of *débris* still in the cave consisted chiefly of siftings. I examined the deepest deposit, the one which the men were working. Beneath a mass of badly sifted refuse, there was a deposit, from 12 to 18 inches thick, of damp, black earth. Here and there in it were bones, to all appearance the leg-bones of ruminants, but so rotten that they crumbled on being touched. The deposit was just about sea-level, and this might account for the dampness, which is usually quite absent in other coast-caves. The *débris* consisted chiefly of fragments of rough-grained sandstone from the roof, mixed with large periwinkle and limpet shells, innumerable flakes of quartzite, and here and there the leg-bones of large animals. I regret now that I did not make a collection of these; but I was only a novice in archæology, and my concern then was with stone implements. The bones are still there, and when I next investigate this or another coast-cave, the bones will have my attention. In this lower deposit, I found a number of quartzite chips, and a few large and ill-shaped implements, but nothing that I cared to carry away. In a heap of siftings near the entrance I found a few flake implements similar to those I had found in the Lighthouse Cave. In a passage leading inwards at the back of the cave I found recesses packed full of bones, mostly leg-bones, but, as I have said, bones were not my object then, and unless some vagrant palæontologist has found his way to Bland's Cave, the bones are there unto this day. On the walls of the Guano Cave I could distinguish a mark showing the height of the floor before the deposit had been disturbed. From there to the bed rock, where the Hottentots were digging, was not less than 20 feet, which may be taken as the depth of the deposit.

(3.) Some months later, I came upon an undisturbed cave of the rock-shelter type, in the same neighbourhood, and at once set about making a section. This I found to be anything but a pleasant or healthy occupation. There was no drip from the roof, so that the deposit was as dry and as pungent as pepper. No sooner was it disturbed than an impalpable dust rose in the air, so as to make it nearly impossible to remain there. Persevering, however, I found that the centre of the cave had been the hearth, for the section was variegated with layers of

white wood-ash, and layers of dark, decomposed vegetable matter, probably grass or reeds used for bedding. Here and there were quartzite chips and flake implements, with shells, bones, and the charred ends of sticks, scattered here and there throughout it. Round the edges of the cave, and lying against the rock, I found the deposit loosely cemented, evidently by water running down the face of the rock. Here I found several fine implements, and I still have a piece of the cemented mass showing a typical mixture of shells, bones, sand, and stone implements.

I have said that the implements in these caves were mostly of quartzite, which is the local rock, but I ought to mention that pebbles of other material—chert, agate, chalcedony, and hardened shale—are not infrequently found on the coast, these having been brought from the interior by floods on the Gowritz River close by. I have often noticed, too, that a piece of these harder rocks is rarely found in a cave-shelter without traces of its having been worked upon. Vitreous quartz was evidently a favourite, though refractory, material among these people, for I never found a scrap of it that had not been chipped to some extent. The cave proved a shallow one, and I cannot say that I was able to distinguish any difference in the form or finish in those implements that were on the surface of the floor from those on the bed-rock.

§ III. *Caves near East London.*

As bearing on the age of those cave-deposits, I wish to mention a rather interesting discovery I made at East London, only a couple of years ago. After examining a number of shell-mounds on the south-west bank of the Buffalo River, I heard of a cave known as Bats' Cave on the coast, about two miles to the north-east. I found the Bats' Cave in the first cliff I came to in that direction, but there were no spoils for me. Returning rather disappointed, I chose the lower path, and found myself on the beach below high-water mark, where some large masses of rock projected through the wet sand. Above me, instead of a cliff, was a steep sand-bank. My eye fell upon a mass of rock dotted with pebbles, and differing in colour from the local stone. Having a prospector's eye for "conglomerates," I went to examine it closely, and I noticed then that besides pebbles there were periwinkle and oyster shells projecting from the surface, and not only these but plenty of chips and some well-formed flake implements. I found myself looking, in fact, at a mass, weighing some hundreds of tons, which was neither more or less than cemented cave-deposit.[1] I looked about for the cave. It was gone! The nearest cliff was a hundred yards away. With the aid of a large nail found on the spot and a large pebble, I was able to get out several more or less perfect implements. The best of these is made of a hard black siliceous shale. The cliff in which that cave-shelter had been is gone,—clean gone, while the cemented floor, formed doubtless by the spray

[1] The remains of the floor of an old bone-cave, partly in a garden, at Mellitre, in Malta, was described by Captain Spratt in the *Quart. Journ. Geol. Soc.*, vol. xxiii (1867), p. 290.—T. R. J.

driven into the cave, while it was yet a cave, remains. Even allowing for the fact that the local rock is of a somewhat friable nature, and that the coast is exceptionally exposed and stormy, it will be seen that the occupation of these coast-caves is not a thing of yesterday. The presence of calcareous floors in the coast-caves is accounted for by the presence of shell *débris* in the deposit. The caves being in sandstone there is no calcareous drip to form stalagmites, but the drip of water from the roof, and, in some cases, the spray from the sea in heavy weather, falling on the deposit (75 per cent. of which is shell-refuse) produces the "cement" in which the flake implements are frequently found imbedded.

§ IV. *Shell-mounds.*

Years before I began to take any interest in archæology, I had noticed heaps of shells at various points on the south coast. On inquiring about their origin from people on the spot, I was told that they were heaps of shells that had been gathered by the farmers many years ago, to burn for lime, and left there. I was satisfied with the explanation at the moment; but the article I read in *Science for All*, and my finds in the caves, led me to suspect that they must be kitchen-middens. The coast from Cape St. Blaize to Great Brak River is literally dotted with them. Together with a friend, I examined a number of them, and found that my surmise was correct. Among the shells of edible molluscs and sand (which constituted the mass of the mounds) I found a great deal of broken pottery, differing, however, from the pottery of the Stormberg Caves in having no ornamentation, and containing roughly pounded white quartz. I found bones mostly of small game, hogs' teeth, broken ostrich egg-shells, two or three bone needles, and a good many quartzite flakes, but scarcely a single well-shaped implement. The presence of the great implement factory under the Lighthouse (p. 260) might partially account for this, but a long series of shell-mounds near Port Elizabeth, and a few on the west side of the Buffalo River at East London,[1] yielded practically the same small result. The exception to this rule I found at Port Alfred, near the mouth of the Kowie River, where some shell-mounds yielded, in addition to what I have mentioned, some very beautifully formed implements, chiefly scrapers in chert, jasper, agate, and chalcedony, which will compare favourably, as regards form and finish, with the finest European or American examples. Some very beautiful implements of the same class, said to have been found near the mouth of the Umzinkulu River in Natal, are to be seen in the Durban Museum. Equally fine, if not finer, implements of chert have been found near the mouth of the Liesbeck River on the Cape Flats, and in these the art of neolithic man in South Africa seems to have reached its highest point. This localisation of high-class implements is rather remarkable. Probably the presence of pebbles of the most suitable material may have had something to do with it. From the character of the pottery found in them and other indications,

[1] See also the "Note on a Shell-Mound, and other Evidence of Prehistoric Man, near East London, Cape Colony," by Mr. G. R. McKay. *Natural Science*, vol. xi, p. 334.—T. R. J.

I am inclined, however, to attribute the non-implement-bearing shell-mounds at Mossel Bay, Port Elizabeth, and East London to Hottentots who doubtless paid periodical visits to the sea-coast when times were bad on land, or for a change of diet. Further investigations on the spot will doubtless throw more light on this point.

The mouths of rivers are the favoured spots for these shell-mounds. Fresh water and shelter from the fierce south-east winds seem to have determined the selection of camps by the kitchen-middeners of South Africa. If shell-mounds are found at a considerable distance from a stream, water will be found trickling from a rock in the near neighbourhood; or if there are no rocks, then it will be found in the sands below high-water mark.

§ V. *Large Implements near St. Blaize.*

Before leaving the subject of coast-deposits, I wish to refer to the presence of much larger and ruder quartzite implements that I found on the slopes of the hill and on the sandy flats behind Cape St. Blaize. They very much resemble in appearance the rude implements that I afterwards found on the Transvaal, and to which I shall refer later on. Their presence goes far to confirm me in the belief that, while the latest occupants of the coast-caves may have been of the Bushman type, these places had been the haunts of an older race of men; a race physically more powerful, but much lower in the scale of civilisation than the dwarfish Bushmen. Among the rude implements strewn upon these Flats, I found some very fine examples of the Stone Axe type; which I am inclined to regard as the highest point in art reached by the pre-Bushman dwellers on the sea-coast. There is, I may say, some historical ground for believing that the remnant of such race came in contact with the first Dutch settlers at the Cape.

The readers of Mr. George Theal's very excellent history of Cape Colony will remember that the aboriginal races first to give the settlers trouble are described as "Strandloopers" (Beachrangers), a race of untruthful and unreclaimable savages. Later they came into contact with nomadic pastoral tribes of Hottentots. Later still, and not until many years had elapsed, did they learn that there existed in the mountainous districts a race of men who were, not only *not* Hottentots, but the most implacable enemies of the Hottentots. These, the Dutchmen then distinguished as "Bosjesmannen" (Bushmen). The presence of large stone axes and other rude and ponderous implements on the littoral of Cape Colony and Natal leads me, therefore, to the belief that on their arrival in South Africa the first Dutch settlers saw in these "Strandloopers" the last remnants of a paleolithic race in South Africa. That they should have so quickly disappeared need not surprise us, for in the same way the Karankuas (a race of Florida beach-rangers), and several tribes of Patagonians have disappeared since the beginning of this century.

§ VI. *Stone Implements near Pretoria in the Transvaal.*

(1.) In 1889, I left Mossel Bay and took up my residence in Pretoria. I had many things of more importance to think about, and archæology was not in my thoughts, when one day, on my way to business, my eye fell upon a stone on the pavement, and I stopped. On picking it up, I saw plainly the "trade-mark" of primitive man, the sign-manual of my Mossel Bay cave-men (the bulb of percussion). "Hullo," I said aloud, "are *you* here?" and my friend with me rather anxiously asked what was the matter. I did not care to enter into a long explanation just then, so I merely said that I saw in the stone a family resemblance to stones I had seen in the Colony. He was satisfied, but the old spirit was reawakened in me. The streets were being made (and in that enlightened city are still being made) by dumping cartloads of gravel on the streets, spreading it a bit with the shovel, and then leaving natural forces and waggon-traffic to do the rest. It was a red ironstone gravel, with a good many water-worn stones in it; and day after day, as I went to and fro, I filled my pockets with rude, but unmistakable, stone implements of various types. I found that the gravel was being carted from a deposit lying immediately below the Artillery Camp, on the southern or upper side of the town. In the gravel, at depths varying from the surface to 3 feet, I found implements similar to those I had found in the streets; and I noticed too that both sharp and water-worn implements were found in juxtaposition. Among those I found in position, about a foot below the surface, was a very fine axe. It was lying in a kind of water-vein, and seemed so rotten that I was almost afraid to handle it.

Of the various implements found in that gravel I have made a large collection, but they are neither very perfect in form nor beautiful in finish (see Plate X of photographs); they are none the less of extreme interest to those who would read in such stones the history of human art. The presence of water-worn stones in this deposit determined me to look for others at a higher level. This I succeeded in finding, and shall refer to it later in this paper.

On the surface, and in water-worn ruts in the same deposit, but at different levels, I found a number of very perfect axe-like tools. I found, in short, that the surface of the whole country is strewed with these relics of primitive races, varying in material with the locality, in every variety of size and form, some worn and rubbed with long attrition, some as fresh and sharp as if they had been made yesterday.

(2.) Thus the mystery of the past deepened upon me, and the riddle which I imagined I had read on the coast was replaced by one too deep for me. The difficulty, however, became more involved. I strayed, one Sunday morning about five years ago, into a brick-field, and began to examine the stones that the brick-makers had thrown aside out of their way, and there, among fragments of rock and water-worn boulders, I found flakes and flake implements that took my breath

away. I could not doubt their human origin without recanting all I had seen and learned since I began to take an interest in stone implements; yet here were implements or weapons that no ordinary hand could grasp or wield, the flake-faces distinct, and the edges comparatively sharp. I found some of them in the clay, in a thin line of gravel, evidently an old surface; and with them, in one case, a fractured flaker or hammer-stone. These examples are both bulky and heavy, and photographs (see Plate XI of photographs), will convey some notion of their appearance. Every week I spent a few hours prowling in that insanitary neighbourhood, till my finds grew so poor that I gave it up and went elsewhere.

(3.) I next gave my attention to the highest deposits of gravel in the neighbourhood, from which deposits I suspected the water-worn implements to have been derived. These deposits I found lying on the steep slope of the hills on the south side of Pretoria, at a height of perhaps 200 feet above the present level of the nearest stream. I have not been able to ascertain the depth of the deposit, but my impression is that the torrential rains of our wet season have already carried most of it into the valley below.

The stones of this deposit are characterised by a brown, shiny patina, so marked that I have been able to recognise the deposit at a distance of several hundred yards. Nor was this merely a local deposit, but will be found, I believe, at or about the same elevation for scores of miles, just where what is known as the "High-veldt" breaks into great valleys, eroded by the effluents of the Crocodile (Limpopo) River.

As to the various types of implements found in these higher gravels, suffice it to say that I notice among them almost every well-defined type that obtains among the finest and most recent Bushman and Coast-cave implements. I wish to mention particularly the presence in this drift-gravel of stones which, while they bear no evidence of having been shaped by primitive men, show unmistakable evidence of having been used by him. The evidence I refer to, consists of hacked and abraded edges, sometimes irregular, sometimes in convex, sometimes in concave curves.

In almost every case they are more or less water-worn. I noticed these peculiar stones as soon as I began to examine the Camp gravels, and kept throwing them away till the number I met with, and the persistency of their characteristics, led me to collect them, and call them "Eoliths," for I could conceive nothing more primitive in human art than that men should use as implements or weapons the natural angles of common stones.

What I call "Eoliths" are all traceable, I believe, to the High-level Gravels (H. H. on the sketch-map, Plate XVII, Fig. 1), although they may be found anywhere lower down. They are invariably water- and weather-worn, with a peculiar brown patina, except when washed down into the Brick-earth.

About two years ago, Mr. Nicol Brown, of London, in looking over my collection, recognised in these the cognates of the implements discovered and described by Mr. Harrison, of Ightham, in the plateau gravels of Kent. I have

since seen Mr. Harrison's collection, and nothing can be more marvellous than the correspondence between my implements of the plateau gravels in the Transvaal and those that he has found on the chalk of Kent.

Four of these notched scrapers (Plate XVIII, Figs. 1–4), found by Mr. Leith, and brought to England by Mr. Nicol Brown, F.G.S., are here figured as follows :—

Figs. 1*a*, 1*b*.—From Springbok Flats, Waterberg, forty miles due north of Pretoria. From the surface of the plain or flats. Not stained dark brown like Figs. 2, 3, and 4. In fact, the thin edges of the quartzite is subtranslucent and sharp, showing that probably the implement was of relatively recent manufacture like the flint specimen found by General Pitt-Rivers in Egypt. (*Journ. Anthrop. Inst.*, vol. xi, Plate XXX, Fig. 6.)

Figs. 2*a*, *b*.—Daspoort, on the north side of Pretoria, before coming to Wonderboom ; at the base of the Camp Gravel.

Figs. 3*a*, *b*.—Camp Gravel ; near the Railway Station, Pretoria.

Figs. 4*a*, *b*.—Muckleneuk near Pretoria, in a dry water-furrow, lower than Mr. Leith's house.

In *Natural Science*, vol. xii (1898), p. 115, Mr. Lewis Abbott briefly referred to these specimens ; and in a letter he describes the specimen shown in Fig. 3 as "a fine-grained, ferruginous quartzite, smooth, and of a dark-brown colour externally. The surface is rather much altered, and is somewhat water-worn all over. The worked edges are less water-worn, and in the upper cracks are deposits of iron-oxide. It has a subconchoidal fracture. Every blow was dealt at the periphery, and has left a distinct pit of percussion ; and all the blows down the right side were administered at the same angle. Except on the right side, I regard the shape as wholly natural. The small hollow was produced by one blow ; but the edges look very much as though they had been hand-worked. The large hollow was certainly 'worked' out before the stone had entered the gravel."

These implements are comparable with several of those described (some figured) by Sir Joseph Prestwich in the *Journ. Anthrop. Inst.*, vol. xxi (1892), pp. 246–276, Plate XX in particular : A. M. Bell, *Ibid.*, vol. xxiii (1894), pp. 266–284 ; O. A. Shrubsole, *Ibid.*, vol. xxiv (1895), pp. 44–49, Plate III ; T. R. Jones, *Natural Science*, vol. v (1894) p. 270 ; W. Cunnington, *Ibid.*, vol. xi (1897), pp. 327–333, Plate IX, arguing that the plateau implements are modified frost-flakes ; A. S. Kennard, *Ibid.*, vol. xii (1898), pp. 27–34 ; R. A. Bullen, *Ibid.*, pp. 109–112, Plate VI in particular; W. J. L. Abbott, *Ibid.*, pp. 112–116 : and Prestwich, *Collected Papers, etc.*, 1895, pp. 62–72, and Plate V in particular.

The section, Plate XVII, Fig. 2, shows clearly the falling-away of the surface from the edge of High-veldt northwards, and the relative position of the three deposits of gravel mentioned in this paper. The Magaliesberg range, lying N. of Pretoria, runs nearly E. and W. for almost 100 miles, intersected at Crocodile River-poort, Wonderboom-poort, and Elands-poort, by the Crocodile, Aapies, and Elands Rivers, draining the north slope of the High-veldt. To me, the Magaliesberg, with

the parallel foothills, are merely vestiges of the High-veldt, scarped by glacial or diluvial currents flowing east and west.

The High-level Gravels at H, which contain the *Eoliths* and the most primitive-looking palæoliths, belong to the earlier period of that denudation.

The Ironstone Gravels, marked I, were formed at a later period, when long, narrow, and shallow lakes lay in the valleys. As the narrow channels at Daspoort and Wonderboomspoort were deepened, the lakes were drained; and the Aapies River, which burst as an underground river out of the Dolomite, a few miles above Pretoria, and carries the surface-water of a small area, has cut its way transversely through both these gravel deposits, and made large deposits of gravel on its own account, at T, where the fall is not so great. In this deposit we find both rude quartzite palæoliths, whose edges are as sharp as if they had been made yesterday, and others, equally or still more rude, with angles so water-worn that they might have drifted a hundred miles. I do not think that the relative ages of the three gravel deposits are open to question. The time that elapsed between the periods of their deposition is another question. To make the problem more difficult, I find everywhere on the surface, and in the beds of present-day streams, implements that are undoubtedly of comparatively recent manufacture. The difference in form and finish between these and the best finished implements found *in situ* in the Ironstone Gravels is generally very slight, the material being in most instances that of the local rocks, quartzite, hard schist and dolerite.

The brown crystalline sandstone, of which the high-level implements are here almost invariably composed, often breaks up into prisms and wedge-shaped pieces. The former are indented on their long edges, as if by violent blows, and the latter on the thin end.

(4.) My latest find in the Transvaal is scarcely less interesting or less puzzling. At a spot on the Aapies River, about six miles below Pretoria, there is, or used to be, a bank of gravel close beside the river, and rising about 20 feet above it. Here on the surface six or seven years ago, I found some water-worn palæoliths, and a few sharp-edged flake implements. About a year ago, the track of the Pretoria-Pietermaritzburg railway was laid down to pass the spot, and a contract was given to some Italians to sift and prepare the gravel for ballast. Going out there one day, I found a number of very rude but not the less remarkable, implements, including not a few answering to the description of the American "Turtlebacks." I pointed them out to the contractor, and asked him, if he happened to find more, to put them aside for me, which he did. The puzzling fact is the juxtaposition in the deposit of very much water-worn specimens and others with edges as sharp as if they were made yesterday. The material of both classes of implements corresponds very closely to a bed of quartzite, extending from the Magaliesberg Mountains, where the river breaks through them, to the spot where they are found, a distance of about three miles.

The implements are of the local rock, and have been made within a short

radius of where they were found. How some of them come to be so much water-worn is what I cannot explain.

§ VII. *Special Implements.*

It only remains for me now to draw attention to a few implements, the co-relative forms of which are familiar to those who have studied European or American archæology.

The muller or corn-grinding stone.—These were used by the Bushman and the Hottentots, and are still being used by the Kaffirs. The South African forms are in no way different from the European mullers. Besides some pounding-stones, I have some which have probably been used as flaking-hammers. I was struck in caves containing tons of flakes by the absence of flaking-hammers. This may be explained by the fact that broken flaking-hammers are probably in time used up in the manufacture of flake implements; but I am inclined to the opinion that the workers in stone did not use special hammer-stones, at any rate for knocking off the larger flakes, but picked up the handiest pebble within reach, and when done with it was thrown away. On many of the pebbles that abound in the coast-caves, one or two abrasions may be seen, while a very few show a patch of surface much damaged by percussion.

A well-known form of implement is the perforated digging-stone (see Plate XII of photographs), so called because they were used as make-weights on digging-sticks, both by Bushmen and Hottentots. I am strongly of opinion, however, that though undoubtedly used for that purpose, they were not *made for that use* by either the Hottentots or Bushmen, if indeed they were made by these races at all.[1] In the majority of cases, the perforation is large enough to admit such a stick as was used for digging roots and game-pits. One example shows unmistakable evidence of having been so used. A great many, however, do not. Their weight, and the smallness of the hole, make it impossible for them to have been used in that way; in others the smallness and lightness of the stone would render them useless. These perforated stones may have been, and probably were, used for many purposes; but who made them, and for what purpose they were originally made, are questions not easily answered. I have also a ring stone, ground to an edge. This was found near Maritzburg, in Natal; and there are about half-a-dozen more in the various museums in South Africa. This form, I may say, represents the *only* ground or polished implement that I have seen or heard of in Africa. Two rimers from the Stormberg are typical implements, corresponding in form almost exactly with European and American models. I have a very typical "fabricator" from the Springbok Flats, which constitute a tract of dry, but well-wooded country, lying between the Pienaars River, 30 miles north of Pretoria, and the Waterberg Mountains. This tract used to be the home of myriads of springbuck and other antelopes; and naturally

[1] See also the memoirs of Dunn and Gooch referred to above.—T. R. J.

where these abounded traces of primitive hunters are to be found. As a matter of fact, these flats are sown thick with flake implements. Go wherever you like across them, you find implements made from the local rocks, or chipped from the agate, chalcedony, and jasper pebbles that abound there. Rarely or never, however, is a perfect implement found, for the hoofs of myriads of antelopes, and the herds belonging to the Dutch farmers who winter there, have trodden them to pieces. They were, doubtless, the handiwork of hordes of Bushmen who preyed on the game till the intrusive and better armed Kaffir drove them into the Kalahari.

Here in South Africa, too, we meet the enigma of the spherical chipped balls. (See Plate XII of photographs.) I have one from the Sand River in Zoutpanisberg, and one from Winburg, in the Orange Free State. In the Bloemfontein Museum there are nearly a dozen, all found near the borders of Basutoland. Strange to say, some of these were found along with three stone axes in a gold-bearing alluvial gravel, a few miles from Krugersdorp. One of the balls is now in the British Museum. The finder of the axes sent them to me. The relation between these implements and the nuggets of gold, found together in that plateau gravel, is another problem I leave for others to solve.

Explanation of Plates XVII and XVIII.

Plate XVII.

Fig. 1.—Sketch-map of the neighbourhood of Pretoria, in the Transvaal. See p. 269.

H.—The High-level Gravels.

Fig. 2.—Geological Section of the same district.

E.—Edge of the High-Veldt : 5,000 feet above the sea-level.

S.—Source of the Aapies River in the Magnesian Limestone.

H.—High-level Gravels, with waterworn palæoliths and eoliths.

I.—Iron-stone Gravels, with both sharp and waterworn implements.

T.—Thorn's Gravel, with waterworn palæoliths.

Distance from E to X 24 miles, south to north.

Fall of the ground from E to X, 1,200 feet.

Plate XVIII.

"Eoliths" from the Transvaal. See page 270.

Fig. 1*a*.—From the Springbok Flats, 40 miles north of Pretoria ; 1*b*, end view.

Fig. 2*a*.—From Daspoort, north of Pretoria ; at the base of the Camp Gravels ; 2*b*, end view.

Fig. 3*a*.—From the Camp Gravel, near the Railway Station, Pretoria ; 3*b*, end view.

Fig. 4*a*.—From Muckleneuk, near Pretoria ; 4*b*, end view.

Figs. 2, 3, and 4 are much waterworn.

DISCUSSION.

Mr. NICOL BROWN remarked that he had walked over part of the ground exhibited in the diagram on the wall, near the Pretoria Railway Station, where Mr. Leith had found implements. At first it was difficult to get Mr. Leith to see that the cutting edges of the implements were the curves on the stones, like Mr. Harrison's plateau implements ; but eventually he became convinced of this,

and has in consequence since seen Mr. Harrison, and satisfied himself on the subject. Mr. Leith is a very close observer, and it is hoped he may find more implements on the "happy hunting ground" on which he lives.

Mr. W. Y. CAMPBELL, in response to the Chairman's call, expressed his pleasure at finding the work of two fellow South-African colonists appreciated by the Institute. He might say that as far as the stone instruments on the table were concerned, they need not be all classed as ancient or as having died out, for one of the large ones, an axe-shaped stone, [from Swaziland] was a familiar instrument with the expert hide-curriers of to-day in Zululand.

Referring to the stone remains in Rhodesia, he had inspected most of them and likewise the mining systems of the ancients there. His conclusions were totally opposed to those of the gifted archæologist the late Mr. Theodore Bent. The ruins and the mining were all part and parcel of a great native polity, the Empire of Monomatapa (*anglicè*, the people who burrow or mine). Outside waves of foreign nations, Phœnicians, Moors, Indians, Portuguese, had all in turn visited that empire through the centuries; and, as protected barterers of foreign products for native gold, resided in Monomatapa. But that the rough stone depôts of the mining districts of Monomatapa were other than depôts and head kraals of a ruling and most probably Bantu race he could not admit, on the multiplied evidences he obtained in some 2,000 miles of travel in Monomatapa, now Golden Rhodesia. He was of opinion that mining in Rhodesia was anything up to 2,000 to 3,000 years old; and, if he was forced to guess an origin for the dominant race which founded this great-mining empire that lasted so many centuries, and fell to pieces just about the time Vasco da Gama rounded the Cape —that mined by surface-mining only many millions of tons of gold-bearing quartz, all by hand-power, reduced the good ore by spalling and then by stone mortars, still by hand, and won the gold grains by patient work of millions of forced hands, and shipped it to the East for many centuries, and probably to the extent of hundreds of thousands of ounces,—he would look to Egypt,—to the disappearance of that wondrous people the Shepherd Kings. Take the well-known Hyksos, a peculiar type of race, only to be found to-day in the dominant Bantu races south of the line in Africa. The primitive gold mining and extraction processes fitfully pursued at Gondokoro to-day, are identical with the process at the same place B.C., as recorded by Diodorus Siculus, and identical with the methods of Rhodesia as pursued for centuries by that vanished polity, the Empire of Monomatapa. The emblems, religious and other, on which Mr. Bent largely based his theories, were in Mr. Campbell's opinion not necessarily original and inherent emblems, but incidental, according to the particular wave of bartering civilisation that happened from time to time to be in favour. He saw recovered in one ruin a silver Jesuit seal and a last-century King George brass umbrella-plate.

Mr. J. BALLOT observed that the most interesting fact brought forward by Mr. Leith in his able paper was, that he believes to have discovered in the Pretoria valley-gravels old stone implements resembling in shape, chipping, and character the old Kent plateau "brownies" and flints of Mr. Harrison, only that Mr. Leith's implements are of quartzite and not of flint. If this were so, it seemed fair to assume that the races of man in both localities used them for similar purposes.

Admitting this, one would naturally ask, did the users in Britain and in the Transvaal live about the same time? or, did the Pretoria-valley folk live at a more recent period? And if the latter, the mere similarity of implement cannot be taken to represent or indicate the same age chronologically.

In the old Kent plateau-flints of Mr. Harrison, the speaker had, so far, not come across any specimen of the circular worked flints, showing a cutting edge worked on by chipping, which would in any respect have better served as a "cutter," or "scraper," than the sharp edges of any plain fractured flint, quartz or quartzite. He ventured to suggest that Mr. Leith's implements were used by a comparatively recent race as "strike-a-lights," using with them iron, iron-pyrites, or harder quartzes. And probably also a similar explanation of the uses of the old Kent "brownies" of Mr. Harrison, may apply. The curves we now find on these old stones appeared to him clearly to satisfy the "strike-a-light" theory.

The chisel, or axe-shaped tool, exhibited on the table and referred to by Mr. Campbell, the speaker knew to be in use, more or less in the same form, at the present day.

Mr. Ballot thought that it would be of great interest and value if Mr. Leith would more exactly determine the position, *in situ*, in the gravels, in which these old implements occur, and whether they do or do not occur even on the present hill slopes.

Professor RUPERT JONES thanked Mr. Campbell and the other speakers for information given about the occurrence and use of stone implements, and hoped for more. He did not think that the hollow curves in the "old brownies" (frost-flakes, used as stick-shaves), could have been shaped by fire-strikers. He referred to flint strike-a-lights, illustrated in the *Reliquiæ Aquitanicæ* (description of Plates A, pp. 138 and 139, Figs. 26 and 27), with a notice of how a pair of flints were used

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SPECIAL MEETING.

DECEMBER 14TH, 1898.

F. W. RUDLER, Esq., F.G.S., *President*, in the Chair.

The Minutes of the last Meeting were read and signed.

The PRESIDENT introduced Professor BALDWIN SPENCER, M.A., of the University of Melbourne, who read a paper on "The Native Tribes of Central Australia, with special reference to their Totemic Systems." This was amply illustrated with a series of admirable photographs and lantern slides.

Professor TYLOR complimented the lecturer upon his paper.

Professor J. G. FRAZER read a short paper dealing with some of the views of Professor BALDWIN SPENCER, and the discussion was carried on by Professor RIDGWAY and others. A hearty vote of thanks was passed to the author of the paper.

SOME REMARKS ON TOTEMISM AS APPLIED TO AUSTRALIAN TRIBES.[1]

By Professor Baldwin Spencer, M.A., and F. J. Gillen.

In our work upon *The Native Tribes of Central Australia*, we have described in detail certain features concerned with the totemic system of the Arunta, Ilpirra, and other tribes, and at the suggestion of Mr. Frazer, to whose work and personal assistance we are deeply indebted, we venture to put forward certain tentative ideas with regard to the possible meaning and origin of totemism as applied to our Australian tribes—ideas also which have independently suggested themselves to Mr. Frazer.

Totemism, to use Mr. Frazer's terms, has both a religious and a social aspect, and it would appear that in the Arunta and other Central Australian tribes, the former, which we believe that Mr. Frazer would now prefer to designate as magical rather than religious, is predominant, whilst in the coastal tribes such as those dealt with by Messrs. Fison, Howitt, and other workers, the social is at the present day the predominant feature, the religious or magical being but slightly marked. In the case of other tribes, such as the Urabunna and Dieri, the area occupied by which lies between that of the Central and Eastern coastal tribes, the social aspect is strongly marked, but at the same time the religious is also clearly indicated.

In all tribes, so far as is known, there is supposed to exist some special connection between the material object and the members of the group of individuals who bear its name as their totemic name, while in addition to this, in certain tribes, the social aspect is revealed by the fact that members of one or more particular totemic groups are restricted in their marital relations to the members of other particular totemic groups.

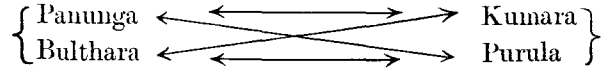
In addition to these totemic groups we find in all Australian tribes, with very rare exceptions, that there are other and larger social divisions which are variously designated as class and sub-class, or phratry and sub-phratry, and that primarily each tribe is divided, quite apart from the totemic groups, into two exogamic moieties.

In the majority of Australian tribes yet studied, each exogamous moiety has been found to include a certain number of totemic groups, and the latter have, in consequence of this, been described as exogamic. If, for example, we take the Dieri or Urabunna tribe, we find that there are two moieties, one called Kirarawa and the other Matthuri, and that in the former are included such totemic groups as carpet snake, lizard, crow, and in the latter others, such as duck, dingo, emu.

[1] The substance of these remarks was delivered by Professor Baldwin Spencer at the meeting of the Anthropological Institute held 14th December, 1898.

Now, as a Kirarawa man must marry a Matthuri woman, it follows that a man of one totem can only marry a woman of another, and thus the idea of the close association of totemism and exogamy has been brought about.

In the Arunta and other tribes we find a very different state of affairs, and it would appear to be quite possible that the original aspect of the totem is simply a religious or magical one, and that the social aspect has been, as it were, tacked on at a later period. In these tribes we find (1) a division into exogamic moieties and (2) a division into totemic groups which are not exogamic, that is, each of the exogamic moieties includes totemic groups of the same designation. Each original moiety has been divided into two, so that there are now four divisions in the tribe, two of which represent one moiety and the remaining two the other. This may be represented in the following diagram :—



Here Panunga and Bulthara represent one moiety and Kumara and Purula the other. The crossed arrows represent the marriage obligation, the horizontal arrows indicate the division into which the child passes. Thus if a Panunga man marries, as he must, a Purula woman, their children are Bulthara; if a Purula man marries a Panunga woman their children are Kumara, and so on. Now, each of these four divisions may include members of one totemic group, so that, for example, a Panunga man of the emu totem may marry a woman of the emu totem provided she belong to the Purula.[1]

We thus see that in these tribes the totemic groups are not exogamic; we have the same exogamic moieties as in the Dieri, Urabunna, and, indeed, most Australian tribes, but each moiety contains totemic groups of the same designation.

If now we turn to the Arunta tribe, which may be taken as representative of those in which the totemic groups are not exogamic, we find an important series of traditions. They deal with the former existence of a state of affairs which is not only very suggestive, but, inasmuch as it differs from the system now in vogue, the traditions may, perhaps, be reasonably supposed to point back to a time when conditions were in reality very different from those which now obtain. It is, of course, quite open to question as to how much reliance is to be placed upon them. If they simply explained the origin of the present system out of, as it were, no system, then we might regard them as simply myths invented to account for the former, but when we find that they deal with a gradual development and with a former state of organisation and customs quite different from and in important respects at variance with the organisation and customs of the present day, we are probably right in regarding them as actually indicative of a time when these were

[1] Full details with regard to this are given in *The Native Tribes of Central Australia*, cap. ii. In actual practice only half of the Purula women are eligible as wives to any particular Panunga man, but this does not affect the main point, which is, that a Panunga emu man may marry a Purula emu woman.

different from those now in force.[1] Summarising the traditions very briefly what we find is this:

(1) A time when men of one totem had marital relations normally with women of the same totem.

(2) A time when men and women of what are now exogamic groups had marital relations.

(3) A time when exogamic divisions were in force but different from those of the present day.

(4) A time when the present exogamic divisions were introduced.

It may also be noticed, in passing, that the introduction of changes is definitely ascribed to certain leading influential men who were the heads of powerful local groups.

For the present purpose the most important point to notice is the traditional existence of totems long before that of exogamic groups, and the fact that when the latter did arise, the totems were not affected by them; in other words totemism appears to be a primary and exogamy a secondary feature. At the present day in the Arunta tribe, in which each individual is regarded as the reincarnation of an ancestral spirit, the latter by entering the body of a woman belonging to a particular exogamic group may change his own group, but his totem never changes.

In the earliest times of which we find any tradition we meet with totemic groups, and the one important feature of all of these is that their numbers are charged with the duty of performing certain magical ceremonies called *Intichiuma*, the object of which is that of securing the multiplication of the particular object, the name of which is borne by the group as its totemic name. It would appear as if there were at all events a strong probability that this, amongst our Australian tribes, may be the primary function of a totemic group just as it is at the present day in the Arunta, Ilpirra, and certain Central Australian tribes.[2]

It may, perhaps, be objected to this, that in the case of these tribes we are dealing with abnormal ones in which the totems have a different signification from that which is borne by them in other tribes in which the totemic groups are exogamic. To this it may be replied that there is very clear evidence that the totemic groups in various other tribes, such as the Dieri, Urabunna, and others to the north-east of Lake Eyre, in which the totemic groups are exogamic, are charged with precisely the same duty, for in these, just as in the Arunta and Ilpirra, we meet with ceremonies which are clearly the exact equivalents of the *Intichiuma* ceremonies already described by us.[2]

At the present day a man may only eat sparingly of his own totem, but it would appear as if in earlier days there were no such restriction. We meet, for example, with traditions such as the following; groups of plum-tree men feeding regularly upon plums; wild-cat men are changed into plum-tree men and after that travel on feeding upon plums; a bandicoot woman changes a Hakea tree

[1] A detailed account of these traditions is given, *op. cit.*, cap. x and xi.

[2] These ceremonies are described in detail *op. cit.*, cap. vi p. 167.

woman into a bandicoot, who then goes on feeding upon bandicoots; a wallaby man wishes to kill and eat a kangaroo, but before doing so he has to change himself into a kangaroo. Traditions such as these can only be regarded as pointing back to a time when a man actually had the right to eat his own totem, when, in fact, it was the normal thing for him to do so.

At the present day the native will not eat much of his own totem. On the other hand it must be remembered (1) that he not only has no objection to other people doing so, but will actually help them to secure it by means of magic; (2) that he claims, as is clearly seen at the close of the *Intichiuma* ceremony when the members of each totemic group partake of what can only be described as a totemic sacrament, the first right to his totem; and (3) that he considers that to eat none of his totem would have just as evil effects as to eat too freely. It is essential for him to partake of the totem so as to identify himself closely with it, or else he would be unable to perform the ceremony, and the supply would vanish.

In former times apparently a man ate freely of his totem and had the first right to it. At the present day whilst the latter feature is retained the former has been changed, but it must be remembered that the one essential feature is the necessity of identifying himself closely with his totem, by, at some time or another, partaking of it. How the change was brought about which has led to the present condition it is difficult to say. Perhaps, though at best any explanation can merely take the form of a conjecture, the idea arose that too much eating of the totem would result in an estrangement between the individual and his totemic animal or plant which would prevent his adequately performing the ceremony essential for the increase of the totem. That changes in custom do arise is a matter of certainty, and it is equally certain that such changes are adopted on the initiative of one or more of the older and influential men who are heads of powerful local groups.

The hypothesis which is now suggested, and which has been advanced independently also by Mr. Frazer, is that in our Australian tribes the primary function of a totemic group is that of ensuring by magic means a supply of the object which gives its name to the totemic group, and that further, the relation between totemism and exogamy is merely a secondary feature.

In regard to the latter the traditions of the Arunta tribe point to a very definite introduction of an exogamic system long after the totemic groups were fully developed, and further, they point very clearly to the fact that the introduction was due to the deliberate action of certain ancestors. Our knowledge of the natives leads us to the opinion that it is quite possible that this really took place, and that the exogamic groups were deliberately introduced so as to regulate marital relations. By this we do not mean to imply that the regulations had anything whatever to do with the idea of what we term incest, or of any harm accruing from the union of individuals who were regarded as too nearly related. Such ideas could only arise after some system regulating marital relations had been introduced and as a result of this. The idea of incest, for example, is a perfectly

arbitrary one: what we regard as a perfectly natural and normal union, an Australian native will regard in the light of what we call an incestuous union and *vice versâ*. It can only be said that far back in the early history of mankind there was felt the need of some form of organisation, and that this gradually resulted in the development of exogamic groups.

If we presuppose a tribe with certain totemic but with no exogamic groups—a condition revealed to us in the early traditions of the Arunta tribe—then any division, such as apparently has taken place in all Australian tribes, into two exogamic moieties would result in (1) placing all the members of one totemic group in one of the two moieties, or (2) in each of the latter comprising indiscriminately the members of various totemic groups. As this division of the tribe came to regulate marriage—possibly it was introduced for this purpose—it would follow that in (1) as in perhaps the majority of Australian tribes, a man of one totem was obliged to marry a woman of another, while in (2) such was not of necessity the case. When once in the case of (1) this train of reasoning had been followed up for some time, then it is not perhaps difficult to imagine that it would lead finally to the restriction of men of one totem to women of another special totem. The social aspect of the totem would thus become emphasized, and it would appear as if the totemic groups were essentially exogamic in nature, whereas, in reality, there is no primary relationship between the totemic system and exogamy.

In conclusion a few words may be added with regard to the question of soul transference in connection with the totem. Dr. Tylor[1] says, "The difficulty in understanding the relation of a clan of men to a species of animals or plants is met by the transmigration of souls which bridges over the gap between the two, so that the men and the animals become united by kinship and mutual alliance: an ancestor having lineal descendants among men and sharks, or men and owls, is thus the founder of a totem family, which mere increase may convert into a totem clan, already provided with its animal name. By thus finding in the world-wide doctrine of soul-transference, an actual cause producing the two collateral lines of man and beast, which constitute the necessary framework of totemism, we seem to reach at least something analogous to its real cause." Dr. Tylor then adds, illustrating the point by a reference to the Arunta system, "But considering the variations found even between neighbouring tribes in the working of their ideas, it would be incautious to lay down as yet a hard and fast scheme of their origin and development."

In the Arunta and other tribes the myth invented to account for the existing relationship between a totem clan and the totem animal or plant is that the ancestors of the former were the transformations of certain of the latter. At the same time it must be remembered that there is no idea of any such thing as the placing of the soul of a member of the totem in the totemic animal or plant, and that the life of this is not held sacred on account of the possibility of its containing the soul or spirit part of a near relative. A man will tell you that his totem is "the same thing as himself," but though he will only kill and eat it on certain

[1] "Remarks on Totemism," *Journ. Anthrop. Inst.*, August-November, 1898, p. 147.

special occasions, yet he will actually help a friend belonging to another totem to do so at any time.

Until we were more deeply conversant with the totemic system of the Arunta people, we were under the impression that in regard to the non-eating of the totem we were dealing with a state of affairs practically identical with the well-known often-quoted description of Grey. The two most striking facts which the native tells you with regard to his totem are (1) that the man regards his totem as the same thing as himself, and (2) that he will not kill and eat it, or only very sparingly and with reluctance. It was only at a later period when we had gained more minute information with regard to the significance of the totem as revealed in the sacred ceremonies concerned with *Intichiuma*, that we came to see more clearly the relationship between the man and his totem, and to understand that, though he regards his totemic animal as being "the same thing as himself," and that he will only on rare occasions kill and eat it, yet this by no means implies that he regards it as possibly containing the soul or spirit part of himself or of a human relative. In other tribes in which the social organisation is the same as in the tribes studied by Grey, and in which also a man will tell you that he only kills and eats his totem with reluctance, and sparingly, we find the same significance attached to the totem as in the Arunta tribe, and we venture to think that there is not sufficient evidence in regard to Australian tribes to warrant the idea that the totemic animal or plant is regarded as containing the soul or spirit part of an individual bearing the totemic name.

DISCUSSION.

Professor TYLOR congratulated Professor Baldwin Spencer on the success with which he had carried his zoological training into the path of Anthropology. A zoologist, he remarked, is half an anthropologist from the beginning. Among the novel and important information which Professor Baldwin Spencer had brought back from his exploration, his account of the native totem-system had, even in anticipation of the publication of the Spencer and Gillen volume on *The Native Tribes of Central Australia*, aroused lively interest among anthropologists. The interpretation of the Arunta totems as resulting from soul-transmission carried on through sacred objects is not only intelligible, but is perhaps the only clearly formulated scheme of totemism yet described, which is intelligible at every step on savage animistic principles. In this it differs remarkably from most other totem-systems such as that of the Algonquins of America, in which the relation of the man to the totem-animal of his clan is obscure, probably because most foreigners who have described it have failed to ascertain the spiritual connexion involved. An important feature in the Arunta-totems is their agreement with Wilken's theory, which traces them to the doctrine of transmigration of souls. So remarkable a new element thrown into the midst of the older accounts in Australia, America, and other countries, should be a warning against the premature framing of theories as to the origin of totems by anthropologists, especially in the absence of full comparison of evidence as to the animistic ideas connected with them.

OBSERVATIONS ON CENTRAL AUSTRALIAN TOTEMISM.[1]

By J. G. Frazer, M.A.

I desire to bear my testimony to the extreme importance of the new anthropological facts collected by Professor Spencer and his colleague Mr. Gillen among the natives of Central Australia. It has been my privilege to read their forthcoming work in proof, and I cannot but regard it as one of the most valuable contributions ever made to the early history of mankind. Let me give very briefly my reasons for thinking so. We all know that of the great land masses or continents of the world Australia is at once the smallest and the most isolated, and that consequently the plants and animals of Australia are in general of a less developed and more archaic type than those of the other continents. For similar reasons man in Australia remained on the whole down to recent times in a more primitive social and intellectual state than elsewhere. In the struggle for existence progress depends mainly on competition; the more numerous the competitors, the fiercer is the competition, and the more rapid consequently is evolution. In Australia the smaller area of the continent combined with its physical features, notably the arid and desert nature of a large part of the country, has always restricted population and retarded progress. This holds especially true of the central area, which is not only shut off by its position from the outer world, but is also isolated by natural barriers from the rest of Australia. Here then, if anywhere, is the ideal field for the anthropologist who desires to study man in the lowest stage of culture now accessible to us on the globe; and when the book of Messrs. Spencer and Gillen is before the world, I think it will be admitted that in them we have got the ideal men for the work. The long and intimate familiarity of the one with the natives, and the trained scientific powers of the other, make up a combination of talent which in anthropological research, so far as my knowledge goes, has never been surpassed. By their labour and skill they have rescued for all future time a document of priceless value for the understanding of the evolution of human thought and society, a document which but for their enthusiastic devotion to the cause of science must almost inevitably have perished beyond recall. If we in this generation owe a debt of gratitude to Tacitus for his somewhat meagre sketch of our German forefathers, with how much deeper gratitude will not posterity in ages to come look back to Spencer and Gillen for their incomparably fuller and more accurate description of a people who stand at the present day far nearer in point of culture to the beginnings of our race than the Germans did in the time of Tacitus? In immortalizing the

[1] Read at the meeting of the Anthropological Institute held 14th December, 1898. A few passages of the paper were omitted in the reading for the sake of brevity.

native tribes of Central Australia, Spencer and Gillen have at the same time immortalised themselves.

Now I should like to say something about that part of Professor Spencer's paper which interests me most, I mean the part dealing with the origin of totemism. With his general conclusion, so far as it relates to the Central Australian tribes, I am in agreement, indeed I drew the same inference from the facts in September last before I became aware that my friend Professor Spencer, as I hope he will allow me to call him, had done so before me. A conclusion which two minds have reached independently from a consideration of the same facts can hardly be a very forced or unnatural one. What then is that conclusion? If we are right, the key to the totemism of the Central Australian natives is furnished by the *Intichiuma* ceremonies of which you have heard to-night. In its origin totemism was, on our theory, simply an organised and co-operative system of magic devised to secure for the members of the community on the one hand a plentiful supply of all the natural commodities of which they stood in need, and, on the other hand, immunity from all the perils and dangers to which man is exposed in his struggle with nature. Each totem group was charged with the superintendence and control of the particular department of nature from which it took its name. Men of the Kangaroo-totem had to see to it that there was abundance of kangaroos, and that the animals were duly killed to furnish the community with kangaroo flesh. Men of the Grass-seed totem had to take care that a plentiful supply of grass-seed grew and was gathered for food. Men of the Water-totem were bound to make rain whenever it was needed; men of the Sun-totem had probably (though of this, I think, Professor Spencer has not yet found definite evidence) to cause the sun to rise and set and to give his light and heat in due season. The means adopted by each totem group in the discharge of its special functions were neither religious nor scientific, but purely magical, so far at least as the multiplication of the totems was concerned. To multiply kangaroos the men of the Kangaroo-totem neither prayed to a deity nor domesticated and bred the animals; they poured blood on a stone which was believed to be haunted by the spirits of kangaroos, and by so doing they fancied that they compelled the spirits to go out and be born into kangaroo bodies. The men of the Witchetty-Grub-totem mimicked the process by which the insect emerges from the chrysalis state, and by this mimicry they believed that they increased the supply of the grub. And similarly with the other totem groups. Each group was a band of magicians working by means of spells and enchantments for the general good of the community.

Such is the view of the purpose and meaning of totemism which seems to emerge from the discoveries made by Spencer and Gillen. How does it square with our old notions on the subject? Hitherto we have supposed that there were two canons of totemism, first the rule not to kill and eat the totem animal and plant, and second the rule not to marry a woman of the same totem group. The second of these rules does not apply to some of the Central Australian tribes at all: a man is just as free to marry a woman of his own totem as of any other.

And not only so, but the traditions of the tribes, which we have good grounds for regarding as authentic, point clearly to a time when men married regularly and by preference the women of their own totem groups.

Then as to the second supposed canon of totemism, the rule, namely, that a man must not kill and eat his own totem animal, it is in general observed, except on certain special occasions, by the Central Australian natives at the present day; but their traditions point very plainly to a time when men were free, and indeed had a prior right, to kill and eat their totem animals. Thus if we follow the traditions of the Central Australian natives, which bear the stamp of authenticity, we are led back to an early stage in the history of totemism when men regularly killed and ate their totem animals, and regularly married women of their own totem groups. If this was so, the old canons of totemism must be given up, at least so far as the Central Australian tribes are concerned. And one of the advantages of the new theory of totemism is that it is perfectly reconcilable with such a state of totemism as is depicted for us in the Central Australian traditions. If the totem group is essentially a band of magicians charged with the superintendence and control of a particular department of nature, there seems at first sight no reason why they should not kill and eat their totem animals and marry women of their own totem group. Indeed, since one of their leading principles is the identification of themselves with the totem animal, it seems natural that they should eat of the animal in order to make themselves of one flesh and blood with it, and that they should marry women of the same totem, a Kangaroo man mating with a Kangaroo woman, just as a kangaroo mates with a kangaroo, an emu with an emu, and so on.

But if we start, as we seem bound to do, with a state of totemism in Central Australia in which men regularly killed and ate their totem animals, and married women of their own totem group, two questions have to be answered. First, why was it that in course of time men refused to kill and eat their totems? And second, why was it that in some, though not all of the tribes, men came in time to refuse to marry women of the same totem? First, as to the prohibition to kill and eat the totem. We may conjecture that this taboo originated in an attempt to carry out more consistently that principle of the identification of the man with the totem which seems to be of the essence of totemism. As a rule, animals do not live upon their own kind: hence, for example, if an emu man regularly kills and eats emus, which he professes to regard as practically identical with himself, the other emus will distrust and avoid him; they will see that he is only a sham emu after all; he will no longer possess their confidence: and his power over them will be gone. Thus in order to retain his influence over the emus, it is essential that he should simulate a close friendship for them, not alienate their sympathies and excite their alarm by knocking an emu on the head and devouring its flesh whenever he gets the chance. Hence, I conjecture, arose the taboo on killing and eating the totem animal. This self-denying ordinance perhaps cost the members of the totem groups less than might at first sight be supposed; for the

members of each group probably calculated on the total increase of the food supply likely to follow from the enforcement of the same ordinance on all the other totem groups. For it must be remembered that in totem society the various totem groups do not live isolated from each other; they are mixed up together, and exert their magical powers for the common good. Under the original system, if we are right, the Kangaroo men made and killed kangaroos for the benefit of all the other totem groups as well as their own; and so with men of the Witchetty-Grub totem, the Eagle-hawk totem, and the rest. Under the new system, by which men were forbidden to kill and eat animals of their own totem, the Kangaroo men continued to make kangaroos, but not for their own consumption; the Emu men continued to multiply emus, though they might no longer partake of emu flesh themselves; the Witchetty-Grub men still wrought their enchantments for the propagation of witchetty grubs, though the dainty food was now destined for other stomachs than their own. But each group consoled itself for its self-denial in not eating of its own totem animal or plant, by reflecting how much more abundant than before would now be the supply of all the other animals and plants of which it was free to partake. The Kangaroo man, no longer at liberty to feast on kangaroo, would count on more copious meals of emu, wallaby, witchetty grubs, grass-seeds, and so on; and so, *mutatis mutandis*, with the members of all the other totem groups.

To the new rule that a man might not eat of his own totem, one very important exception was made. At certain times he was and is still bound among the Central Australian tribes to partake of a little of the totem animal or plant as a solemn ceremony. Without this it is believed that he could not perform the magic ceremonies necessary for the multiplication of the totem animals or plants. He could not be a Kangaroo man and make kangaroos unless he had in his own body the flesh and blood of a kangaroo; he could not be a Grass-seed man and make grass-seeds unless his corporeal substance were at least in part composed of grass-seeds; and so with the members of the other totem group. Here, it is plain, we have at last the long-sought totem sacrament which Robertson Smith with the intuition of genius divined, and which it has been reserved for Messrs. Spencer and Gillen to discover as an actually existing institution among true totem tribes.

The second question which the new theory of totemism has to face, is this: why did men come in time to renounce the right of marriage with women of their own totem? This question is far more difficult to answer than the former: indeed a complete and satisfactory answer cannot be given until we have solved that wider and deeper problem of the origin of exogamy in general which has hitherto baffled anthropologists. Still without probing the depths of this central mystery of social life, I think we can see how, when the principle of exogamy came into operation, it may have been applied to the already existing totem groups. In Australia, Melanesia, and North America, we have almost indubitable evidence of the bisection of a community into two exogamous classes, each of which in some tribes has been again bisected into two exogamous sub-classes. Amongst the Central Australian

tribes we have the clearest traditionary evidence that this system of exogamous classes and sub-classes was superposed on a previously existing system of non-exogamous totem groups. If, when the bisection of the community first took place, the existing totem groups were arranged, as they naturally would be, some in one of the two new classes and the rest in the other, the exogamy of the totem groups would follow *ipso facto*. But, of course, this conjectural explanation of the application of exogamy to the totem groups does not touch the question of the origin of exogamy itself.

Thus far I have confined my remarks mainly to the totemism of the Central Australian tribes, the remarkable features of which have just been disclosed to us by the memorable researches of Messrs. Spencer and Gillen. But the question naturally presents itself: Will the same explanation which we have given of Central Australian totemism apply to totemism in other parts of the world, as in America and Africa? To this I would reply that so far as we can see at present there are no facts which seriously conflict with the new theory, and there are some which positively support it. Let me remind you that on the new hypothesis the key to totemism is furnished by the *Intichiuma* ceremonies, that is the magical ceremonies performed by the totem groups for the purpose of controlling and directing the various departments of nature for the good of man. A crucial question, therefore, is: Do we find analogous ceremonies performed by totem groups in other parts of the world than Australia? And in general do we find that elsewhere than in Australia, members of a totem clan are credited with the power of exercising special control over the totem? The answer to both questions is that we do. In one of the Torres Straits Islands, for example, members of the Dog clan were believed to understand the habits of dogs and to be able to exercise special control over them.[1] In one of the New Hebrides, when a man wished to catch octopus, he used to take one of the members of the Octopus family with him; the latter stood on the beach and called out, "So-and-so wants octopus," and then plenty of octopuses would come and be caught.[2] On a cloudy morning the Sun clan of the Bechuanas were wont to perform a ceremony to make the sun shine out through the clouds; the chief kindled a new fire in his dwelling, and every one of his subjects carried a light from it to his own hut.[3] The intention of the ceremony clearly was by means of sympathetic magic to blow up into a brighter blaze the smouldering fire of the sun. In the Murray Islands, Torres Straits, it is the duty of the Sun clan to imitate the rising and setting of the sun,[4] probably to ensure the punctual performance of his daily duties by the great luminary. Among the Omahas of North America the Small Bird clan performs a magic ceremony to keep small birds from the crop; the Reptile clan performs a similar ceremony to protect the crops from worms; and the Wind clan think they can start a breeze by flapping

[1] A. C. Haddon, in *Journ. Anthrop. Inst.*, xix, pp. 325, 393.
[2] Codrington, *Melanesians*, p. 26.
[3] Arbousset et Daumas, *Voyage d'Exploration*, p. 350 *sq.*
[4] A. E. Hunt, in *Journ. Anthrop. Inst.*, xxviii, p. 6.

their blankets.[1] The same Wind clan practises a magic ceremony to stop a blizzard. They paint one of their boys red, and he rolls over and over in the snow, reddening it for some distance all around him.[2] This stops the blizzard, the notion apparently being that the white snow will not fall when it knows that it will be thus reddened and defiled. In another North American tribe the power of causing the snow to stop falling would seem to have been claimed and exercised by men of the Snow totem.[3] Some of the examples which I have just cited explain the attitude of the totem clan towards their totem, when the totem is of a noxious and maleficent nature. In such cases it is the function of the clan, not of course to multiply the numbers of the totem or increase its virulence, but on the contrary to disarm, counteract, and keep within due bounds its dangerous influence. Hence, members of the Serpent clan in Senegambia profess to treat, by their touch, persons who have been bitten by serpents[4]; and the same profession was made by Serpent clans in classical antiquity.[5] Similarly in Central Australia members of the Fly totem claim to cure, by the touch of a magic implement, eyes which are swollen with fly-bites. And on analogy we may conjecture that certain Arab families who believed their blood to be a remedy for hydrophobia[6] were descended from men of a Dog totem.

These instances seem to show that the principles which have moulded totemism in Central Australia have worked also to produce the same result in other parts of the world. It would be premature to say that the momentous discoveries of Messrs. Spencer and Gillen have finally solved the problem of totemism; but at least they point to a solution more complete and satisfactory than any that has hitherto been offered.

[1] J. Owen Dorsey, in *Third Annual Report of the Bureau of Ethnology* (Washington), pp. 238 *sq.*, 241, 248.

[2] J. Owen Dorsey, in *Eleventh Annual Report of the Bureau of Ethnology* (Washington), p. 410 *sq.*

[3] *Relations des Jesuites*, 1667, p. 19 (of the Canadian reprint); *Lettres Edifiantes*, vi, p. 169 *sq.*

[4] *Revue d'Ethnographie*, iii, p. 396.

[5] Strabo, xiii, 1, 14; Pliny, *Nat. Hist.*, xxviii, 30.

[6] W. Robertson Smith, *Religion of the Semites*, New Edition, London, 1894, p. 369.

ORDINARY MEETING.

JANUARY 10TH, 1899.

F. W. RUDLER, Esq., F.G.S., *President*, in the Chair.

The Minutes of the last Meeting were read and signed.

The election of Col. Sir THOMAS H. HOLDICH, K.C.I.E., C.B., and Sir GEORGE SCOTT ROBERTSON, K.C.S.I., as Fellows of the Institute, was announced.

The PRESIDENT nominated Mr. J. WALHOUSE and the Rev. H. N. HUTCHINSON as auditors of the last year's accounts.

The PRESIDENT introduced Mr. F. W. CHRISTIAN, who had lately returned from the Caroline Islands; Mr. CHRISTIAN then read his paper:—"On Micronesian Weapons, Dress, Implements, etc.," which was well illustrated by lantern slides and by an interesting exhibition of objects brought home by himself.

A discussion ensued, in which Mr. GOWLAND and Mr. READ questioned the lecturer's views as to Japanese influence being apparent in the islands; Mr. BALFOUR pointed out the great advantage of an explorer bringing home the actual objects used by the natives; and Dr. GARSON described the differences in the skulls exhibited.

The PRESIDENT closed the discussion by a vote of thanks to Mr. Christian for his interesting paper, which was carried unanimously.

ON MICRONESIAN WEAPONS, DRESS, IMPLEMENTS, ETC.

By F. W. Christian, B.A., F.R.G.S.

[with plates xix to xxiv.]

If you will take a chart of the Central Pacific and look along a little north of the equatorial line above the great island continent of New Guinea, you will see a number of islands and islets, styled the Carolines, dotted over the ocean like little pieces upon a gigantic chess-board, stretching about 1,400 miles from east to west, bounded on the west by the Pelews, the north-west by the Ladrones and Mariannes, and to the east and north-east by the double chain of the Raliks and Radaks, which geographers call the Marshall Group. It is with the inner life and history and folk-lore of this interesting people of the Caroline Group that we have to deal to-night. A strange, apathetic folk, with all the Malay naïveté and, alas! some of the Malay treachery—in a word, endowed with all the strange power and strength and the equally strange weaknesses and limitations of the Malay, whom we English are just beginning to understand. The nature of the Caroline islanders supplies a very remarkable link between the sullen Melanesian and his blithe brother the Tahitian—the brightest and most characteristic example of a Malay turned Polynesian. I am only here touching the very fringe of a charmed region in archæology only dimly indicating rare and curious specimens out of a human museum that only too surely will be open for only a limited time; for the peoples of the sea-girt lands are fast dying out from the domain of their forefathers. So I ask you to-night to bear with me awhile and listen patiently to fragmentary narrations, culled from the desultory annals of a forgotten folk—fragments themselves of an ancient people, bold and enterprising as the Phœnicians of the Mediterranean or the famed vikings of the Northern Seas.

PONAPE.

Ponape is the largest and most important of the Eastern Carolines. It takes its native name Ponu-pei (West Carolines, *Fanu-Pei*) from some remarkable Cyclopean ruins existing near Metalanim harbour on the east coast. The island has an area of some 340 square miles, and is surrounded by an extensive barrier reef enclosing a wide lagoon in which lie scattered a number of small islets—mostly uninhabited—and used by the natives merely as fishing stations. The interior is an impenetrable jungle, divided into ravines and deep valleys, which are bounded



HOUSE AT CHAKAR-EN-YAP, RONKITI RIVER.



RUINS AT NAN-TAUACH, WITH METALANIM NATIVES.



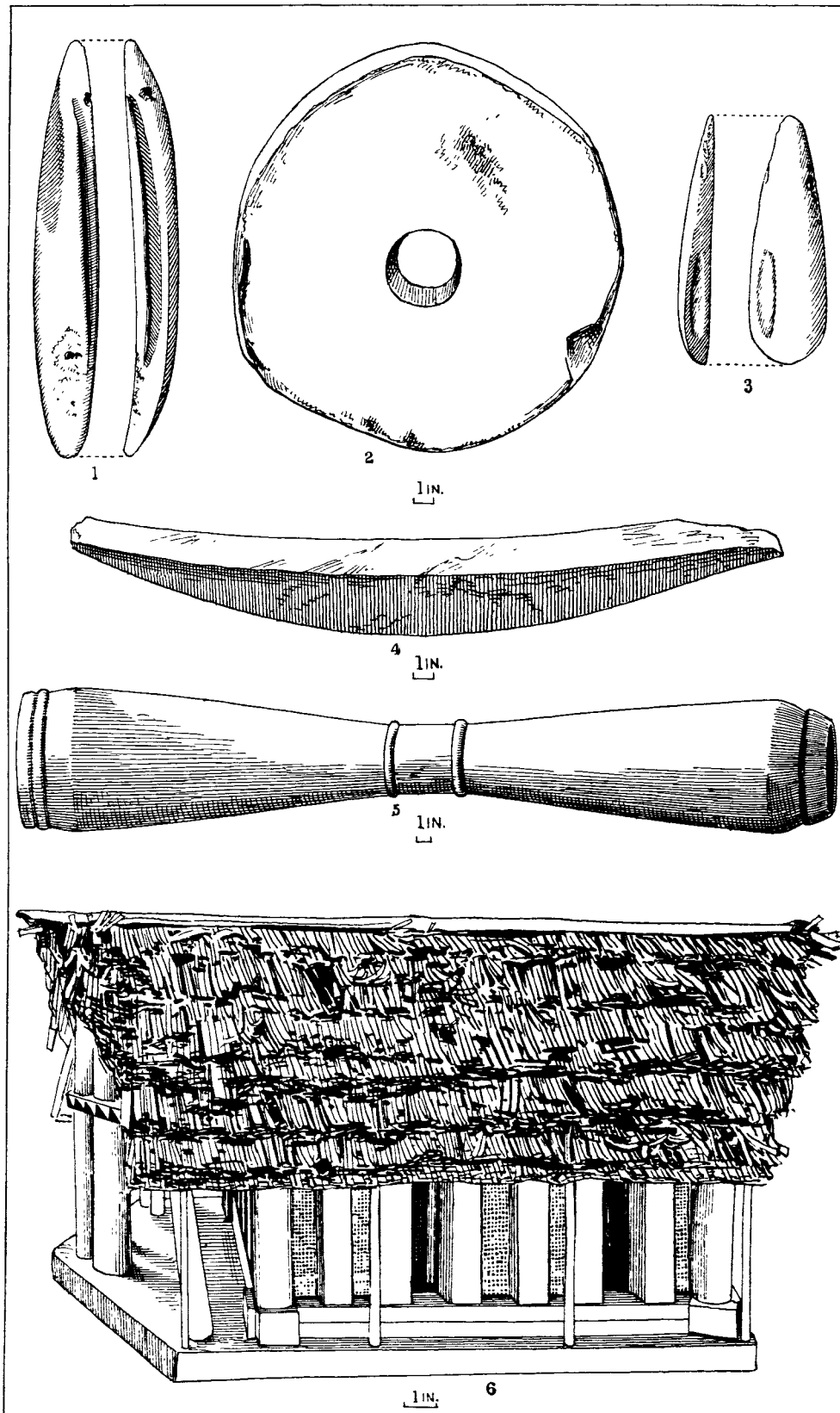
FIG. 1.—ENTRANCE TO SANCTUARY, NAN-TAUACH.



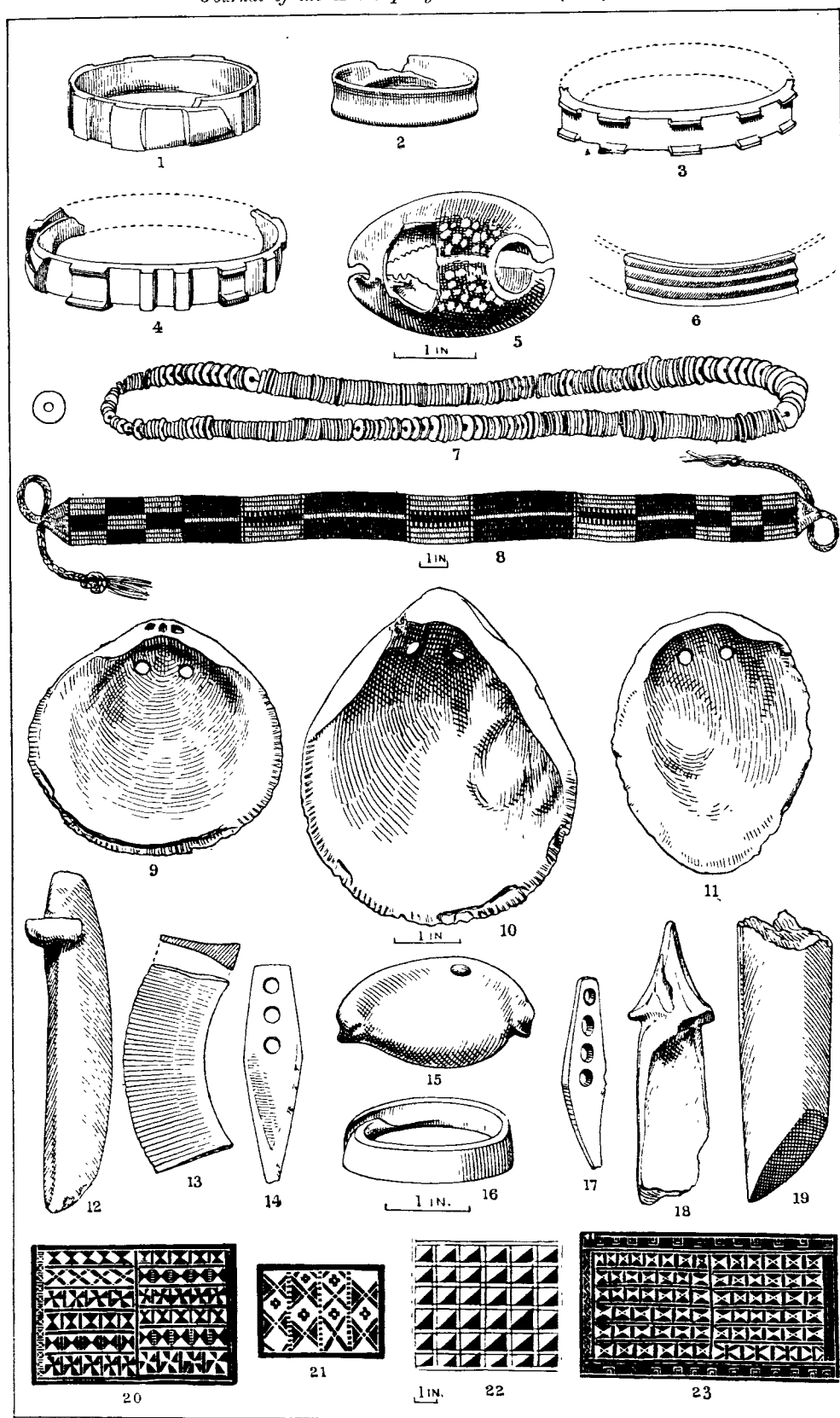
FIG. 2.—NATIVES OF PALIKER, N.W. PONAPE.



WOMEN AND CHILDREN, METALINIM TRIBE, PONAPE.



OBJECTS FROM THE CAROLINE ISLANDS



OBJECTS FROM THE CAROLINE ISLANDS.

by hanging woods. Ponape has a population of some 5,000, divided among five *wei*, or tribes.

The natives are a branch of the widely spread Malay family and akin to the wild tribes of East Formosa and the Dyaks of Borneo, and have much in common with the people of the Marianne or Ladrones, the Visayas of the South and the Tagala and Pampang folk of the North Philippines. They have traces of a primitive Negrito strain, and there is also much to connect them with the Melanesians of the New Hebrides, the Solomon Islands and the Banks Islands to the southward. They have absorbed many Polynesian elements from the great waves of migration sweeping outwards and eastwards from the Malay Archipelago and Indonesia some thousand years ago; Mongolian traders and pirates have also contributed to this strange race medley. The Ponapeans are hardy and intrepid warriors and navigators, most expert fishermen, but surprisingly poor tillers of the soil. They have something of the Malay apathy and something, too, of the Malay sullenness and revengefulness. For the rest, they have a great turn for intrigue and chicanery and a very pretty talent for knavery. The Ponapean is a crafty and bitter foe, but very sincere in his friendship and most cordial in his hospitality to those who win his good-will.

Dress and Adornments.

The dress of the men when worn at work was a narrow girdle "*Uaiuai-lol*," about a foot in breadth and some four feet in length, exactly the same as formerly worn in Japan, made of the woven fibre of the banana or Niu tree, often dyed yellow from the *Morinda citrifolia*—going once round the waist, down between the thighs and tucked in behind at the back so as to leave a piece depending like a tail. (It is the *Hume* of the Marquesas, the *Malo* of Hawaii, Samoan and Fiji [*cf.* Bisaya, *Baro*, a woman's frock], the *Maro* of Tahiti, Mangareva and Maori, and the *Palpal* of the Mortlock Islands). The dress worn on occasions of festival or after-work was the *Kol* (that of a chief in the language of ceremony was called *Mol*) or native kilt, composed of the split filaments of young cocoanut leaflets (the pinnæ of the branch) steamed in the oven, steeped a day or two in water under heavy stones, scraped with cockle-shells, and often they were dyed bright yellow with turmeric or with the juice of the bark of the *Morinda citrifolia* or Flame Tree. A new *Kol* is a pretty sight, but exposure to the sun quickly makes the bright hues fade out. Sometimes with the cockle-shell, each frond would be carefully pinched and creased into wavy lines, the work of the old women. This was a *Kolikoch*. The working dress was called "Likau-mal," and their regular dress for festivals or leisure *Kapuot* or *Kapot*. The chiefs and men of note in the community used to wear belts of banana fibre (*Tor: Tur*) elaborately woven out of banana fibre, on which was strung rows of pink, white and grey shell beads. These were of two designs and varying sizes, one resembling in shape the Maori *hei-tikis*, or pendants of greenstone called *Puke* or *Puake*—the other round which they call *Pal*. This is very similar to the *wampum* or shell bead-ornaments

which form the coinage of many of the North American tribes. For a common man to put on the belt of a chief was a serious offence in Ponape as in Hawaii, in which latter country the penalty was death. (*Cf.* the old distich, "Ina hume ke kanakai ko ke alii malo e make noia." "If a person should bind on a chief's girdle, he shall die for it.") Carved and plain shell bracelets were also the fashion (*Luoû-en-Matup*) from the place of their manufacture. A wise woman named *Kamai* is said to have invented them. The same word is applied to a ring of turtle-shell as far as Yap. (Possibly the word is the *Lio* or *Liko* of Polynesia, and equal to a hoop or circle.) Ear-rings of turtle-shell (*Kichin-pot*) were sometimes worn, but the Ponapeans did not pull down and distort the lower lobe of the ear as do the Mortlock Islanders and the primitive people on Easter Island (*Rafa-nui*). destroyed by a Polynesian under Hotu-Matua about 1200 A.D., styled by their conquerors the *Turinga-Roroa* or Long Ears A similar custom prevailed amongst the early Bisayas in the Southern Philippines, and the Spanish chroniclers of the Conquest of Peru remark upon it as a fashion of the early Inca nobles.

The dress of the women was called *Li-kau* or *Li-kau-tei* (*Kau*—clothing, Polynesian *Ahu* or *Kahu*), a wide deep girdle depending as far as the knees, woven from the bark of the *Nin*, a common forest tree of the ficoid order. Native cloth made from the Paper Mulberry bark — the *tapa* or *siapo* or *Ngatu* of Polynesia—does not appear to have been known to the Ponapeans. Necklaces of shells and flowers were much in use, likewise garlands of the fragrant *Gardenia* and *Cananga odorata*, either of which are styled indifferently *Pur-en-uai* or *Chair-en-uai*, "*The Foreign Flower.*" Wreaths of polypody fern and various aromatic herbs and grasses were greatly in favour. Dancers, male and female, were fond of wearing fillets of banana leaf, dracœna (*Ting*) and cocoanut leaflets. These last they would wind round their fingers so that the tips projected above the knuckles. with which they produced a rattling, whirring effect in the choruses. These they styled *Anichinich*.

Hats.—Made of pandanus leaf, helmet fashion, with projecting peak—used by fishermen on the reef—called on Ponape *Li-chorrop*, on Kusaie *Surafraf*, on Yap (where they assume the peaked shape as worn by Chinese coolies and fishermen) *Ruatch*. Of late years the people of Pingelap and Kusaie are famous for their clever workmanship in plaiting broad low sailors' hats on the European design.

Tools and Implements.—The raw material for their textile operations were: (1) the inner fibres of the banana, the *Basho-fu* of the Japanese; (2) the bark of the *Nin*, a tree of the ficoid order used in making a coarse sort of native cloth; (3) the bark of the Kalau (*Kala-hau*), the *Fau* or *Hau* of the Polynesians. The Ponapean name means the *Au*, from which *Kal* or string is made. It is the *Gili-fau* of the Mortlock Islanders, whose dialect has preserved so many South Polynesian forms. Strips of the bark of this tree whilst fresh are as tenacious as the green withes with which Samson was bound. This valuable substitute for Manilla hemp is called *Tip-en-kalau*. The third indispensable material is the *Tipanit* or cocoanut fibre, obtained after sinking the husks a few days in the sand

about high-water mark. Each tiny strand is laboriously twisted end on end between the deft fingers and thumbs of the old men until a surprisingly strong string, cord or rope is formed, the thickness varying according to the fancy of the plaiter or weaver. This is the far-famed cinnet cord so extensively used in Pacific waters for lashing cross-beams and posts into place in house-building, and as a substitute for nails in keeping the framework and delicate cross-pieces of the outrigger in place in the building of their canoes. This material the Ponapeans call variously *Puel* and *Kichin-mot*.

The natives used to be very adept in constructing all manner of traps and snares out of the pliant strips of hibiscus. The nooses they used in snaring birds and wild pigs. These they called *Letip* or *Litip*, which, being interpreted, means a *woman's deceit*. Other kinds of traps they called *Katikatia-mau*, which word in plain English signifies *a good device*. Nowadays this name is admiringly applied to those elegant instruments of torture sold by the traders and known as gins or tooth-traps, for the capture of the rat and the *mus ridiculus*, with whom the native is at endless feud. The primitive rat-trap was made of slips of reedgrass or fine cane, and the central ribs of cocoanut leaflets formed the *Kachik* or spring. The bait consisted of a lump of *Mar* or fermented breadfruit, whilst a heavy piece of rock was laid so as to fall upon and crush the intruder directly the spring was touched. In Yap they call this trap *Bildil*. Now and then, but rarely, there is to be seen a cage (*Pachapach*) made of slips of hibiscus wood cunningly joined together, in which sits a disconsolate-looking bird. The modern Ponapean, whatever his ancestors of a remoter day did, does not trouble his head much about taming birds—a pretty trait, by the by, in the character of his southern cousin the Samoan. However, one may see sometimes in a Ponapean hut a ridiculously-tame blue heron (*Kaualik*) or a pretty black-and-white seabird called *Chik*—children's pets. Their matter-of-fact elders, knowing the trouble in times of scarcity of filling hungry mouths, are hardly likely to let childish sentiment interfere with the just claims of the larder.

Fish-hooks and Fishing.—*Kich*—the hook of wood or bone, the body of mother-of-pearl (*pai*)—the glitter of which as in Tahiti attracts the fish, like the bright metal spinner used for trolling for pike in the English meres and the lakes of Scotland and Switzerland. The metal fish-hooks of varying size which the traders have introduced are greatly in request. The Ponapean is a most keen fisherman. One skilled in this art is always assured of a goodly alliance in marriage, to which his resourcefulness as a food-provider entitles him.

For bait they use bits of squid or cuttle-fish (*Kich*) or else the bodies of hapless hermit-crabs (*Umpa*) torn from their snail-shell homes. They frequently use bundles of *Up* root for stupefying fish in the pools. When crushed up, these roots exude a milky juice of a most powerful narcotic property, and the fish are soon floating about helpless. The larger Murænas or sea-eels are the last to succumb, and finally writhe upwards out of the deeper and remoter holes in a stupid and comatose condition. The *Up* is a creeper much resembling the Wistaria.

The Kusaians call the plant *Op* (*cf.* the Malays *Ipoh* and *Upas*—poison tree). The latter name is the Javanese form, around which so many absurd legends have been woven. The Malay name for the *Up* plant itself is *Tuba*. Hence the phrase "*Men-uba ikan*," "to catch fish by stupefying with *Tuba*."

Nets.—

Uk.—The generic term for nets in general.

Uk-alap.—Large stake-net or seine-net, used for catching turtle and big fish (some 20 fathoms long by 5 in depth).

Uk-e-tik.—A small seine-net.

Chakichak.—A small casting net used for fishing on the edge of the reef just above the deep water.

Naik.—A hand-net, rim-shaped like a bow. Used for scooping up fish driven down a narrow pass or ditch in the coral reef.

Lukuk: Lukouk.—A hand-net used for catching small fish.

Liem.—A bag-net used at openings of weir or passage at the beginning of ebb-tides generally four days after full moon.

Mucha (Polynesian *Mata*) is the word used for the *Mesh* of the net.

A fish-pen or weir of stone is called *Mae*, one of cane or reeds *Ilu*.

In Yap *Thagal* is a cane weir; *Aech* or *Etch*, a stone weir.

Maot, a fish-pond.

Household Implements, etc.—Ponapeans style them all "*Kapua kai.*"

Mats.—

(1) *Loch* is the mat of the country. Its peculiar Japanese-like design may be seen from a photo exhibited. It is sewn together, not plaited, made of the leaves of a species of pandanus (*Kipar*) which answers to the *Ranfara* of Tahiti, the *Rau-ara* of Rarotonga, and the *Lauhala* of Hawaii. Length generally about 7 feet, breadth about 5. The Paliker district is noted for its manufacture of these mats, which cost from six to eight Spanish dollars apiece. The *Loch* of a great tribal chief or prince is called "*Parror*" in the language of ceremony.

(2) *Li-rrop* or woman's *Rrop* is the name applied to mats of foreign make and pattern, such as those from Pingelap, Strong's Island and the Marshall Islands, many of them very ornamental in design. The name itself seems to be a foreign word (*cf.* Yap, *Tsop: Trop:* Gilbert Islands, *Rob:* Pingelap, *Rop*).

(3) *Tiaau*, coarse mats plaited from cocoanut leaves. The article and its name alike borrowed from the Gilbert Group, as also the rough baskets of the same material known as *Onoto*.

(4) *Kie: Kiei*, sleeping mats, made of finely-woven pandanus. Derived from the Mortlocks (*cf.* Polynesian *Kiekie*, a species of pandanus used as a textile fabric; and Kusaian *Kiaki*, a mat).

Mosquito Screen.—*Tei-'amu-ché:* the *tau-namu* of Nuku-Oro and the *Tai-namu* of the South-Western Pacific. The Ponapean mosquito screen, before the introduc-

tion of gauze and linen, is said to have been composed of a cloth made out of the bark of the *Nin* tree. The Paper Mulberry, from which the *tapa*, or *siapo* or native cloth of South Western Polynesia, is not used in Ponape although it does occur sparsely.

Pillow.—Ulul: Ulunga: the *Alunga* of South Western Polynesia, either made of bamboo or of a log of wood, a length of the trunk of a tree-fern or pandanus tree, are frequently used for this purpose, for the Ponapeans are a hardy, vigorous folk, and care not much for soft lying and sumptuous fare.

Baskets.—Kiam, a long flat basket or tray, plaited, roughly, of cocoanut fronds split down the middle and interlaced in a diamond pattern.

Kopo.—A circular basket of varying depth made of the same material.

Kop-en-lait.—A fisherman's basket, somewhat larger than the above.

Onoto.—A large, coarsely plaited fish-basket—a Gilbert Island word.

Paikini.—Some thirty or forty of the above Kiam or flat trays fastened together end on end so as to form one long tray. This is heaped with food and carried in solemn procession by about twenty men in the festivals celebrated in honour of a plenteous season. It is laid down on the grass and a band of men approach with shell-axes on shoulder with which they sever the strips of "*Kalau*" bark which bind the component "*kiam*" together. Then the food is apportioned, the Choko or Kava is brewed, the ancestral spirits are invoked, and the people fall to serious business tooth and nail.

Fan Ta-n-ir, i.e., Thing for fanning.—A fan made of pandanus or cocoanut leaves. Those intended for fanning up the embers are clumsy in make, but those designed for personal use are much more neat in finish, and resemble the Marquesas very closely.

Et (Maori *Kete:* Samoan and Tahitian *Ete*).—A netted bag of Nin or Kalau fibre.

Combs—Rotom or *Rokom:* Like those of Yap, made out of the wood of the Koto or white mangrove—and of similar design. Now scarcely ever seen, and the name is now applied to the guttapercha and celluloid and tortoise-shell combs supplied by the ever-active trader.

For *Bottles* they use the hollowed circular fruits of the Pulel, Felak and Ichak plants, which belong to the Calabash family. The gourds are strung together by fives and sixes with cinnet. They use the large ones for storing drinking water, the smaller for the various scented oils—in which native fancy so strongly delights.

Cooking Utensils.—It is the old Indian word *Thal: Thaliya: Chaliya: Tal* (on Ngatik *Thal*), a survival from some remote era of crockery ware in South or Central Asia—denotes a wooden dish or platter or a cocoanut cup. *Chapi* is another name given to vessels of wood. The latter word occurs in the Mortlock *Sepei*, Marshall Islands *Chebi*, Gilbert Islands *Tebo*, Pelews *Theb*. In the Mariannes *Tape* denotes an earthen pot, the Yap equivalent being *Thab*, *Thib* or *Tib*. The occurrence of this common word over so wide an area points unmistakably to the gradual substitution of wooden for earthen vessels in Micronesia, owing

to the industry of pottery-making falling out of use—in certain spots where no suitable clay or kaolin was available. It is rather astonishing to see the art of pottery-making lost in a good-sized and well-settled island like Ponape, and retained in a small spot like Yap. A curious fact illustrating the same lost industry was pointed out by the Rev. Lawes of Port Moresby in British New Guinea, in the preface to his useful vocabulary on the Motu dialect, in which the word "*Tunua*," which in South, West and East Polynesian means "*to cook by broiling or roasting*" is used in a special sense for the *baking of pottery*. The white man's ironpot is supplanting everywhere the earthen vessels of Micronesia, where the primitive industry is yet preserved. The "*ainpot*" is to be found in most Ponapean households and embraces a variety of uses, being alternately used for making huge brews of black tea and boiling quantities of yam and cocoanut milk, the result being frequently a weird blending of different flavours on the plate of the European who drops in by chance to *pot-luck*.

The *Um* or earth-oven, where the raw food is steamed (*cf.* Motu *Amu*, the *Umu* of South West Pacific lands), has too often been described by travellers to need detailed notice here. Cooking underground is the general mode in Ponape, although fish are frequently broiled on the glowing embers of dried cocoanut shells—their favourite fuel. An important kitchen utensil is known as a *Kachak*. It is an oval, flat-bottomed trough of *Tong* or *Chatak* wood, pointed at both ends like the bows of a boat—used like the *Umete* or *Kumete* of South Polynesia for concocting various toothsome messes of pounded yam, taro, bananas, plantains or breadfruit mixed with cocoanut milk and salt water in varying proportions. The curious philologist may compare with Eskimo *Kayak*—a canoe. In Ponape a whale-boat is actually called *Waar-en-kachak*, from its sharp fore and aft build.

They use a needle of human bone for tattooing the elaborate designs on arms, thighs and legs. This they call *Kai*, the operation *Inting* (Sulu *Indian*).

No well-ordered establishment is complete without a husking-stick (*Ak*, called in Samoan *O'a*, and in Tongan *Oka*), used for tearing off the fibrous outer envelope of the cocoanuts. It is a stout stake of mangrove-wood, pointed at both ends and driven into the ground at an angle of about .

The same useful wood is used as a digging or planting stick, like the *Oka* of the Hawaiians and the *Koa* of the Aztecs in Mexico. Cut a little longer, they make capital poles for punting canoes along in the shallower portions of the lagoon. These the Ponapeans used to call *Lata* (Hindu *Latha*). Where the *Ak* is found the *Pelik* or scraper is seldom far off.

Loom.—The Ponapeans in olden times had a sort of loom resembling the *Puas* of their neighbours of Kusaie, with which they wove the fibre of the banana and the bark of the *Nin* tree into the *Uaiwai-lol* or narrow men's girdles, or into the *Li-kau* or woman's petticoat. This machine, now long out of use, they called *Tantar* (Hindustani *Tant*: *Tantra* id; the verbs describing the process are *Tilpori*: *Toro* and *Ka-tantaki*).

Native houses often get dusty, so the industrious housewife always has two or

three brooms in hand for sweeping out the rubbish and keeping the mats clean and neat. These brooms are called *Kap-en-nok* or Bundles of *Nok*—the central ribs of cocoanut leaflets.

In the house of any person of distinction there will generally be found a huge sea-chest (*Kopa*), or, at all events, a small camphor-wood box (*Kokon*) such as islanders love to secrete their possessions in.

If a native be given to carpentering pursuits one may possibly see a cross-cut saw (*Racharach*) hung up carefully out of harm's way, or a grindstone (*Ú*) standing sentinel in the courtyard amongst the pigs and chickens.

The boat-builder greatly prefers the modern gimlet of steel (*men kapurropur*, i.e., "*the thing that whirls round*") to the primitive borer of his forefathers, made out of a long sharp-pointed Murex shell. It was formerly used for piercing boards and planks in canoe and housebuilding—cinnet lashings supplying the place of nails. The word for a hammer or mallet is *Chuk:* a wedge or nail is *Pach*. In olden times holes were bored and cinnet fastenings used, or wooden trenails. Nowadays they call the nails introduced by traders *Kichin-matu* or Bits of Iron.

Other things necessary in household industry was the *Tikak*—a bone or shell needle, used for sewing together the layers of "Och" or ivory palm-leaf for thatch and joining the leaves of the pandanus into the form of *Loch* or sleeping-mats. They were also used in making the ancient *I* or mat-sails out of the "*pit*" or pandanus leaves, which had undergone a preliminary process of steaming in the earth-oven. The roll of pandanus leaf for fashioning the sleeping-mats was called *Chal-en-pitipit*, also *Tuneit*. For making the native belts of banana fibre (*Tor: Tur*) with their garnishing of pink and white shell-beads (*Pul: Pake*) the Ponapean housewives used a fine tortoise-shell hackle (*Mera*) for combing out the rough material—the inner portion of the banana suckers. These belts from their rarity are much esteemed by the Ponapean, which he values at ten dollars.

Domestic Implements, Tools, Instruments of Music, and Weapons.

Axes and Knives.—The ready wit of the Ponapean is sufficient to supply his simple needs. Nature has been bountiful, and he has proved himself of no mean adaptive powers in dealing with economic plants and the various resources of the lagoon and reef; in providing himself food, shelter and clothing. This will be apparent as one by one we will examine his household implements, his tools, his devices for procuring food by sea and land, his instruments of music, his weapons of war, and, later on, his food and clothing, such as they are.

The Ponape words for axe and knife are doubly interesting historically. They indicate a reversion, through long isolation, to the primitive Stone or Shell age; moreover, they inversely show the early influence of an active Malay element radiating throughout the extensive Caroline Archipelago. Writing, clearly, was not the only art lost by these ocean tribes during their long isolation. And by examining these words we can easily infer how these two things came about,

though the dates of the early migrations and forays are almost hopeless in the lack of proper chronological data and the snapping of traditions—weakening links in the process of untold generations.

Now the general term in Ponapean for instruments of the axe, adze, or hatchet type is *Chila* (in Kiti they are called *Ki*, and in the Metalanim district *Patkul*). From their polished marble-like appearance some have taken their material for white jade-stone, but J. S. Kubary has clearly shown them to be pieces of the central shaft of the *Tridacna Gigas* or Giant Clam, worn down into that form by long and careful rubbing. In our excavations in the central vault of Nan-Tauach, we settled the question beyond dispute, for we dug up a number of these implements both in the rough and the smooth. They are now getting somewhat scarce on the island—ousted from use by the introduction of steel axes, American axes and tomahawks by the ever-increasing competition of traders. (The new introduction they call "*Chila-pangapang.*")

In early days they used to cut down trees with these primitive instruments, with the aid of fire. One charred layer chipped off, fire would be applied again—a somewhat tedious process. At great festivals the grandees used to sit with their adzes balanced over their shoulders, as seen in the picture of a Pelew chief taken by one of Captain Wilson's men after the wreck of the "*Antelope*" on the Pelew reefs in 1782.

Varieties.—The *Matau* used for hollowing out canoes.—It has the handle spliced along the back. A small adze was known as *Maluuk*, and resembles the *Matau*—only smaller. The word *Chila* is the Motu *Ila*. It is one of the primitive Asiatic words which the minute observer cannot help noticing in the wide Pacific area. It appears in the Sansk. *Shila : Shil*—a stone, and in the Latin *Silex*—flint. The root *Sil* in the sense of piercing, cutting, is, according to Isaac Taylor, of frequent occurrence in the Ural-Altaic tongues.

On the other hand, the Metalanim word for *knife*, "*kápit*," takes us into times when early Malayan or Sulu pirate voyagers landed with creeze and sword (Philippines *Kampit*—short sword: Philippine and Sulu *Kampilan*—a sword), with which they doubtless made an exceedingly lively impression upon the ill-armed aborigines. At the beginning of this century before the traders brought machetes and 18-inch and 2-foot knives, the Ponapeans made their "*kapit*" of split bamboo, those called *Lopuk*, or shell. These they used for slicing up fish or breadfruit, as do the Yap people to this day, who call these latter *Yar-ni-matsif*, or cutting-things of shell. (In Central and Western Carolines a shell-knife is called *Char* or *Yar*—*cf.* Southern Philippines, *Yoro*, a knife). The Metalanim folk use the old name *Kapit* for the new article, but the people of Kiti and Not have adopted the English word. "*Naip*" they call them, not "*cuchillo*," as one might expect. This preference for English words rather goes against the grain of the Spanish occupiers of the land. Now there are two other highly significant names of Malayan derivation running through these 1,200 miles in the Sea of the Little Islands. Iron is called *Mata* in Ponape; *Masra*, *Mossa*, and *Wessa* in Kusaie.

In the next two groups, the Mortlocks and Ruk, we find the form *Wasai* and *Wasi, Asi*. A little southward and westward we find it reappear in Nuku-Oro and Kap-en-Mairangi as *Wasei*. In Yap it is *Wasai*. In German New Guinea it occurs as *Bassi*. The Malay word is *Basi* or *Besi*, of which the above are doubtless slightly differentiated forms. Finnic *Was* or *As*—iron. Caucasian, *Asa* and *Vasa*.

Sub-race Axe.—It stands to reason that as the basaltic or coral lands of the Pacific produce no iron, steel is unobtainable. It may be presumed that some of the early settlers in the Carolines brought with them a stock of iron or steel weapons, or wrested them from stray pirates of a later day. When these rusted away or got broken, and could not be replaced, the traditional name would in all probability remain, and the natives, under stress of necessity, would fall back upon the handiest materials available to supply their place. Those who live on low coral islets would find the shaft of the *Tridacna*, a shell very abundant on their reefs, a convenient substitute. Those who inhabited high basaltic lands, as Tahiti or the Marquesas—on the first of which the water is always deep over her coral reefs, and the latter has no reefs at all—would fall back on the black basalt stone to fashion their cutting instruments. Samoa and Fiji have done the same. In those islands the blackstone axes were common enough before the advent of the curio hunter. They can still be picked up sometimes on the mountain tops or on the sites of deserted villages and encampments. In Ponape I met with no axes of blackstone, the reason probably being that the shell took a finer edge readily, and was easier to work than the basalt, which does not so readily shape into flakes with keen cutting edges.

The other Malay word is *Parang*, which, in the Central Carolines, is used both for knife and iron. In Malayan vocabularies it is given with the meaning of a bill-hook or short sword, and its survival in these remote lands appears to indicate a lively and deep-seated impression of the terrors of "*the noble white weapon*" wielded by the piratical hands of these vikings of the Pacific Seas.

Ponapean Weapons.—*Pai*, a sling (*Yap Gol*), *Pai-uet*, a sling-stone, the favourite missile weapon of the Ponapeans before the introduction of fire-arms by the New Bedford and New England whalers. It is plaited out of strips of *Kalau* or Hibiscus bark, or else out of the cinnet fibre or that of the *Niu* tree bark. Amongst the Ponapeans there is no more favourite passage in the Old Testament than the famous duel of David and Goliath, the translation of which is particularly spirited and happy in the missionary vernacular. The incident is peculiarly in accord with native fashion in every way, and the name David (*Tepit*) is very common amongst the Protestant folk on the south-west coast.

The bow is called *Kachik-en-Katiu*, the arrow *Katiu-en-kachik*—a weapon not much in favour on the Polynesian and Micronesian area. It is more of a Melanesian weapon. In the Gilberts it is called *Bana*, in the Marshall Islands *Li-ban*, *i.e.*, the *Ban* or bow of a woman, regarded as a woman's or children's weapon. In Polynesia, known as *Fana*, and in the Melanesian area as *Vana*, *Van* and *Bana*,

and *Fan*. The Malayan form is *Panah* (in Sanskrit *Ban* or *Van* is an arrow, and *Panach* a bow-string). It may be worth mentioning that in ancient Hawaii the bow was used by lads, old men and women for the noble sport of shooting at rats —a sad come down for the weapon which won Merry England such high renown. The Ponapeans say the bow was used by the *Chokalai*, or dwarf aborigines. The bow was made of Katiu or Ixora wood, the bow-string of the bark of the Hibiscus. the arrows of Hibiscus wood or slips of Alek or reed-grass, tipped with the spine of the sting-ray. Nowadays it is entirely out of use.

The club was occasionally used. It was known as *Lep-en-tuka* or *Chup-en-tuka*, by the Mortlock islanders as *Sop-en-ura*. Also called in Ponape *Chup-en-pok*. The word *Chup* is evidently the Indian *Chob*, which denotes the same weapon amongst the Hindu peasantry. According to Nanchau of Mutok (*Tenedos*) stone clubs called "*Permachapang*" were used. Of these we found no traces either at *Chapen-tukai* or *Nan-Matal*, neither did I see during my stay on the island any of the elaborately carved war-clubs or maces noted in the Marquesas, Fiji, Samoan, and Tongan groups.

Spears were the favourite weapon in hand to hand conflict. They were called *Katiu* from a species of Ixora of that name. Its straightgrowing stems were used by the natives for fashioning their spears and javelins. The *Ak* or mangrove also was much used for making spear-shafts. They were pointed with the sting of the Ray (*Likant-en-kap*). In the Mortlocks the spear is known as *Uak* or *Silak*, in Ruk *Auck*, Pulawat *Lil*, in the Central Carolines as *Tillak*, *Tallak*, *Dilok* and *Thilak*. In the Marshalls *Mori*, *Marre* or *Murri*. In the Pelews as *Rumu*, *Lilid* and *Kullolothuk*. In the Mariannes as *Gugudanum*. In the Philippines it appears in the Tagala *Tulag* or *Tolak*—a war-spear. (The Favorlang of Formosa has *Roddok* and *Biloagh*.)

The most formidable of all the Caroline spears were those of Yap, fashioned out of the wood of the *Bâ* or Areca palm. They were often nearly 12 feet in length, pronged and barbed on either side in the cruellest fashion so as to inflict a most terrible wound. The prowess of the men of Yap with this redoubtable weapon earned for them a very extensive dominion in the Central Carolines, and indeed, up to Ponape, which some of their more distant forays seem actually to have reached.

Musical Instruments and Dances.—Like all islanders they are very fond of music, and a cargo of banjos and accordions would find a ready sale. The *Chaui* (Fijian *Dauai*) or shell-trumpet—the *Pu* of the South Polynesians, is used as a signal of war or assembly, like the *Atabal* of the ancient Mexicans. Close by the pointed end of the shell a circular hole is bored. Some of these are of very large size, and are often picked up amongst the foundations of old houses.

The native flute is called *Chup-en-ro* or *Chup-en-pearri*. It is made of a piece of *Ro* or reed-grass or of *parri* or bamboo. It is not quite a foot in length—closed at one end by a stopper of leaves and pierced with six holes up to the mouth-piece. It is not a nose flute like the *Tosarri* of Formosa, or the *Fango-fango* of Samoa.

The native drum is called *Aip*—the old name *Peu* or *Pau* (the *Puhu* of Tahiti). One I saw in Paliker, now in the British Museum, is about 5 feet in height and made of the wood of the *Tupuk*. It is shaped exactly like a huge erect dice-box. It was covered with the skin of the Sting-Ray and beaten with a stick of Hibiscus wood on occasions of festival. The Spanish chronicler Periero describes a smaller sort which he saw in Not district, which he calls *Piki-piki*, evidently from mistaking the meaning and application of the word *Pikir*, which is a verb meaning *to beat a drum*—not, I think, denoting the drum itself. This one, he says, about 3 feet high and covered with fish bladders, which they collect fresh on the day of the festival—he describes it as adorned with square markings and painted with various colours, especially red and black. When the feast is over they take away the skins and get others, for they are easily burst and need constant renewal. It may be observed that the Ponapeans are very fond of the accordion, and of the modern jew's-harp, which they call *Kachang*, i.e., *make sound*. It seems that they had a sort of jew's-harp of their own, like the Samoan *Utete*, but the modern ones have ousted the ancient article.

Dances.—There are two kinds—one peculiar to the men called *Kulek*, danced standing: and another, of men and women together, like the *Siva* of the Samoans, performed sitting ("*Uen*" or "*Wen*") with graceful wavings of hand, wrist and arm. The dancers are always in *Kapot*—holiday dress, anointed with fish or cocoanut-oil; the men in bright yellow *Kol* or kilts, their heads garlanded with flowers or chaplets of green fern, their necks and arms copiously hung with festoons of fresh cocoanut leaflets, and on the fingers of each hand a sort of ring with bunches of *Nok* or ribs of cocoanut leaflets bristling out. These, in shaking, produce a sort of harmonious rustling which they term *anichinich*. Some of the choruses have a fine deep sonorous chime like those of the Marquesas Islanders. Many of the dances are anything but decorous in character. It is said that a number of the words used in the chants both in Yap and Ponape are different altogether from the spoken language. Certainly some specimens of Ponapean songs written down for me by Kaneke and Chaulik on Paniau were hopelessly unintelligible to me, although I could both read and converse in the vernacular Ponapean with considerable ease and fluency. It would seem that many Sagas of the acts of legendary heroes would have come in from the Marshall Islands and from Yap, and thus would be of great historical interest in tracing ancient connections, and the gradual or accidental fusions of different Micronesian races. It is here that the phonograph or graphophone as well as the camera comes to the aid of the ethnologists. Once get the exact sounds recorded on the wax cylinder, and the task of the philologist becomes tenfold easier; *cf.* the Hawaiian word *Mele*, a song, and the Pelew word *Moloik*, dancing and singing. *Melakaka* is the word for the song or dramatical composition of a priest or chief, and is therefore very happily adopted by the missionaries to denote the *Psalms* of David, and the Song of Solomon. A funeral dirge, mourning, or threnody is called *Tarak*. It is said to be very solemn, weird and impressive.

YAP FOLKLORE.

The Invention of Stone or Fé Money.

There was a wise old man in Tomil named *Anagumáng*, to whom Le-gerem, the Fairy Godmother of Yap, showed all the stars in heaven, and the reasons of their rising and setting. After three months' study this apt pupil took seven men with him (the usual "perfect number" in Yap tradition), manned large Gothamite canoes, and sailed in to the unknown southern waters in quest of the land of Balao (the Pelew Group) under the guiding of the constellation Mageriger or Pleiades. Entering the North-reef passage and passing Bab-el-Thaob he came down to the Island of Peleleu. A little to the northward of the last-mentioned island lie certain conical islets named *Kokial* scattered about the wide lagoon. Here he found a new sort of shining stone (calcite or quartz), and conceived the idea of hewing it into various portable forms to serve as a rude medium of exchange. There was an abundance of pearl-shell here as well, of which he helped himself liberally to the same end. The quartz-rock, with infinite trouble, he cut with his shell-axes into the form of fishes about a yard long. Some fragments they, for the sake of variety, worked into the shape of a *Wal* or turtle. Other pieces they made into the shape of a crescent moon. Others again they chipped into wheels of different sizes, rounded like the orb of the full moon. With these last, when they had bored a big hole through the middle of each, Anagumáng was satisfied. So they loaded up their canoe and returned, the voyage back only taking five days. When they took the stones ashore, Le-gerem kept the wheels with the holes in the middle and threw away the rest as worthless, and put into operation a powerful charm to centre all the desire of the people on the recognised form of standard coinage.

Before this time, ruefully remarks the narrator, there was no fighting in Yap, Ever since that, however, there have been constant civil wars in the land, arising from the eagerness of each tribe to acquire a large portion of the coveted treasure.

After this there were frequent expeditions going to the Pelews from Tomil, Rul, and Gochepa, and many were the people who lost their lives from imprudently putting to sea in the stormy season. Others, after reaching the Pelews, perished on their return journey, their vessels swamping or upsetting from carrying too heavy or carelessly-stowed freight of these precious and fatal stones. Others, again, were slain in battle by the people of the country, who were valiant men, and naturally much resented these uninvited visits and the plundering of their beds of pearl-shell. But now there is peace, and the King of Pelew has a number of Yap-men residing, by his permission, engaged in hewing out these coveted treasures and sending them up to Yap by occasional trading schooners, which take them in as ballast.

The Invention of Fire and Cooking.

The yam and the taro were in Yap, but as yet there was no fire to cook them. The natives used to dry them in the sand, and, as it were, sunbake them. And the folk suffered grievously from internal pains and besought Yalafath to help them once more. Immediately there fell a great red-hot thunderbolt from the sky and smote a Choi-tree (*Pandanus*). At the contact of the fiery element the Choi broke out into a regular eruption of prickles down the middle and sides of every leaf. Dessra, the Thunder-God, thus found himself fixed fast in the tree-trunk, and called out in a lamentable voice for somebody to deliver him from his irksome prison. A woman named Guaretin, sunbaking taro hard by, heard the voice, and helped the distressed god. He inquired on what work she was engaged, and when she told him, bade her fetch plenty of moist clay. This he kneaded into a goodly cooking-pot (*Thib*), to the great delight of the worthy housewife. He then sent her in search of some sticks from the *Arr* tree (called Tupuk by the Ponapeans) which he put under his armpits, and infused into them the latent sparks of fire, and went his way. This is how the art of making fire from the friction of wood, and the moulding of pots out of clay, came to the primitive folk of Yap. Hence two proverbs suggested to the cautious and practical Yap mind:—

Moral.—Never refuse to do a good turn to those in need—it may pay you better than you think. To which may be added another: Beware of hidden fire even when you see no smoke.

The Invention of Canoe-building.

The indefatigable Le-gerem prepared to astonish her people with a display of first-class magical powers. One day a very big canoe was seen slowly floating down from the clouds, let down by innumerable ropes or pullies, just over the village of Gocham or Gotham in Tomil. The people flocked in crowds to see the wonderful sight. Some inauspicious words of the impatient multitude broke the charm. Before the canoe could be lowered in safety to the earth, the ropes broke and the wondrous structure was smashed up beyond all hopes of repair. Then Le-gerem hewed a Voi tree, measured it out with care, and with infinite pains made another of similar model. The long and somewhat clumsy Yap canoes, running up high in bow and stern, fore and aft, like Scandinavian vessels, with their heavy solid outriggers and the curious fishtail ornamentation in bow and stern, show how the industry of the Gothamite ship-builders followed the directions of their long-suffering patroness.

Names of portions of woodwork in a Yap canoe:—

Ngi.—Central platform or seat.

Gol.—Seats.

Gom.—High figure-head in bows.

Karagai.—High figure-head in stern.

Madamafeng.—Strengthening outer-pieces.

Cf. Tagala *Barangai: Barangan*, a ship.

Fulang.—Solid platform between body of canoe and outrigger.

Tham (Polynesian *Ama*, Fijian *Thama*).—A heavy piece of wood, flat and pointed at each end, forming to the floating portion of the outrigger. This is doubtless a relic of the ancient double canoe, on which model the early Pacific navigators used to build their vessels for going long sea voyages.

Galuf.—Strengthening pieces, cross bits running parallel with *Tham*.

Daot.—Long pieces, supporting *Fulang* and uniting *Tham* to body of canoe.

Totau.—Cinnet or cocoa fibre lashings holding *Daot* in place.

Filai.—Upright pieces crossed by *Galup* and connecting *Tham* with *Daot*.

Eot.—Thin auxiliary upright pieces, connecting *Tham* with *Daot* to give elasticity and save straining.

The Naming of the Birds.

Laponga was a Chaumaro (High Priest) of old in Metalanim. It was he who sat at the left hand of the first Clau-te-leur King, it was he who first tasted the Kava, and he who uttered the first "*ainani*," the magic spell invoking the presence of Nan-Ul-Lap, chief of the "*ani*" or local genii who love to be honoured when the feasts and the dances are the order of the day in the Great Lodge. The second man in the land the keeper of the King's conscience, as it were, his Father-Confessor. He sat in the Council Lodge, his locks streaming below his girdle after the manner of his ancient caste, crowned with the yellowing leaves of *Ting;* his *Pathul* or shell axe crooked obliquely over his shoulder, and his carved *Irar* or magic staff laid close to hand: in his fingers a bundle of leaves of *Alek*, the native reed-grass used in casting lots after the ancient custom of the land. Such was the wizard and such his estate. And he was wise beyond the wisdom of all men, but his love for his fellows tallied not therewith. For his heart was cold, and he ever delighted in mischief and ill pleasantries, and would wander at times over the land in all manner of strange shapes, working his evil will. In one of his freaks in the form of a *Lukot* or native owl, he took to wife one of the *Lukat-au-ual* or nymphs of the forest. Numerous was their progeny, and the hanging woods of the lofty island were filled with beings endowed with human utterance, and who could change from bird into human form at will. After process of time, as mortal men are wont, Laponga grew weary of his fairy queen, and would have taken to wife a lady of high birth at the Court of the King. And the children of the forest knew of it: and it came to pass that whenever the great magician took his walks abroad, the woods resounded with the cry "*Ipa, Ipa*," which, being translated, signifieth "*Papa, papa*." In great wrath at this interruption of his meditations the great man, like the bald-headed prophet of another tale, turned, and with a solemn imprecation, fixed his children for ever in their bird-forms and took away from them human utterance.

Then in a twinkling a strange babel broke out in the forest-glades. The

angry children continued their feeling remonstrance, calling out upon their unnatural parent, each as his peculiar vocal organs gave him utterance. The *Kaualik* or blue heron croaked out "*Ko*," "*Kau*," "*Kau*," the doves, after their kind, murmured "*Murrorroi*," "*Kin-uet-uet*" and "*King-king*," and the brown parrakeet broke out into inarticulate chirpings "*Cherrerret*:" the small sea-bird with black and white tail feathers could only scream out hoarsely "*Che-a-a-ok*." The other birds could only utter doleful and woeful screeches. Some went away into the deep bush and let themselves out in spite as tenements (*tá-n-wáar*) to the wood-demons there; and delight at times to afflict human settlements with their ill-omened voices, pouring forth songs of impending death and doom in the stillness of the night. The blue heron went out on the salt marshes and the edges of the reef, where he stalks about the pools in mournful dignity, picking up little fish and crabs. All day long the *Murroi* or grey dove wails for her lost voice in the woods: the Cherret twitters round the coco-blossoms, whilst the Kulu or sandpiper and his elder brother the Chakir wail dismally over the sandy flats, the shingle, and the coral limestone. But one small bird, more persistent than its fellows, pursued Laponga on his way, and so deafened him with its ceaseless twittering, that growing weary he faced around and loosed a fresh curse upon the head of his much-injured offspring. Thus ran Laponga's curse—

"May your head turn round and round when a man casts a stone at you, so that you may fall at their feet from very dizziness—an easy prey to be baked in the oven for their meat. This, I say, whenever the hungry wanderer does as I do now." With these words he chased away the wretched fowl with shower after shower of pebbles. And so it happens to this day, with the generations of little brown birds in the inland bush, that whenever one throws a stone in their direction, whether he hit or miss, down they come fluttering to the ground, trembling, helpless and paralysed. And the name of the bird is *Li-máaliel-en-takai* or *Miss-giddy-at-stones*.

And Laponga's miracles held men's minds in awe, for he did many notable deeds. The record of his enchantments, his sorceries, and of the knaveries and manifold mischiefs he wrought; is it not set down in the lost book of the annals of the Kings of Metalanim. After Laponga's death, from which his arts could not protect him, his head was changed into stone, and lies unto this day right in the middle of the water-way between the islets of Pan-ilel and Pein-Aring. The tale must be true, for there is the very stone. We collided sharply with it on one of our exploring sea-trips at low tide and all but caved in the bows of our canoe, and kept the Manilla man busy enough for some minutes alternately bailing and praying to the saints until we beached her and fixed up the leak.

TWO FAIRY TALES.

A METALANIM ALLIGATOR STORY.

(I tell you the tale as it was told to me by an asthmatic old sage in the rebellious tribe of Metalanim, in a dialect bristling with diphthongs and double and treble consonants.)

The Visit of an Alligator to the Ponape Coast.

In the reign of King Chau-te-Leur a huge lizard (*Kieil alap amen*) came swimming into the great harbour, and took up its quarters on the island of Pan-Katara, otherwise called Pangothra. Taking him for an *Ani* or tutelary genius they brought him heaps of food and made offerings of baskets of fruit and savoury messes of cooked yams and bananas to conciliate the favour of their spectral-looking visitor (*manlikamichikaman*). As might well be expected, vegetable diet did not content him, and there was soon a disappearance of some of the basket-bearers, which the chiefs considered, after losing some of their most industrious slaves, as a mean act of ingratitude. So the big lizard was proclaimed a public enemy and a cannibal fiend, and the warriors of the tribe went forth to battle with the monster. But he came forward very angry, seized some of the boldest in his iron jaws and crunched them up in pitiable fashion. They belaboured him industriously on every side, but their spears and shell axes failed to make impression upon his thick skin, whilst pebbles and sling-stones glanced off him harmless as raindrops. So at last, since the lizard would not run away, of course the Metalanim braves had to. Finally subtlety triumphed where numbers and valour availed nothing. It was suggested to slay a fat hog, cut him open, and after stuffing him full with pounded Up root, to leave him roasting over a great fire blazing in the basement of the Nach or Council Lodge. All the sides of the Nach were to be walled up with logs and driftwood, save one opening big enough for the monster to crawl through—attracted to his last meal by the far-reaching sound and scent of the crackling and frizzling pork. When their foe was fairly stupefied with the working of the narcotic drug the opening was to be quickly filled up and the building set in a blaze. (Such was the fate of this solitary alligator, no doubt washed out to sea on driftwood from one of the great rivers of New Guinea, or drifted away through the straits of Gilolo by the ocean currents.) He crawled right into the trap set for him, devoured the cooked pig, felt very drowsy, and went off into deep sleep, to wake up, finding himself trapped, shrivelling in a merciless furnace of fire with his triumphant enemies shouting and dancing round his funeral pyre.

The Pulict or Honey-eater.

This is a little bird with long delicate curved bill and crimson breast, about the size of an English robin, and very much like him in pugnacity and cheekiness.

It lives by extracting honey from the flowers of various plants and trees, especially from those of a cocoa-nut. Of him the natives tell a quaint little tale, of which this translation gives some echo—

"A little red bird in a greenwood glade
Clung tight to a bough in the leafy shade;
Whilst the light airs whispering out of the wood.
Swung him to and fro in a sulky mood.

'*I kang mokitikit*' shrill he sang,
And the glades in answer resounding rang;
And this as an English songster might say,
'*I don't at all like on this bough to sway.*'

As he carolled harder the breezes blew,
And his querulous notes fast and faster flew;
Then the zephyr's patience quite failed at last,
And they breathed out a sudden and furious blast.
At the shock, in a sudden disastrous fall
Toppled tree and branches and bird and all:
And scarce from the ruins escaped he creeps,
And he still wakes the echoes with doleful cheeps;
In a feeble chirrup he tells his woes,
And the practical jokes of his fairy foes."

Explanation of Plates XIX–XXIV.

Plate XIX.

House at Chakar-en-Yap, Ronkiti River.

Plate XX.

Portion of the inner enclosure surrounding ancient vaults at Nan-Tauach in the Islet of Nan-Matal, Metalanim District, East Coast of Ponape. In the foreground are three natives of Metalanim.

Plate XXI.

Fig. 1.—Entrance to the sanctuary of Nan-Tauach, Metalanim.
„ 2.—The Headman of Paliker, with his wife and daughter, tribe of Chokach, North-West Coast, Ponape.

Plate XXII.

Group of women and children at Ponatik, Metalanim tribe, East Coast, Ponape.

Plate XXIII.

Objects from the Caroline Islands.

Figs. 1, 3.—*Patkul*, or adze blades of clam-shell, excavated in the ruins of Metalanim on the Island of Ponape.
Fig. 2.—*Fē*, or disc of coral rock used as money, from Yap; quarried in the Pelew Islands.
„ 4.—Gong of basaltic rock from Ronkiti, Ponape; used as a signal or bell in religious ceremonies.
„ 5.—Wooden drum (*Aip*), from Paliker district, North-West Coast of Ponape.
„ 6.—Model of a Ponapean house.

Plate XXIV.

Objects from the Caroline Islands.

Figs. 1–19.—Specimens excavated in the ruins of Metalanim on the Island of Ponape.
„ 1, 2, 3, 4, 6, 13, 16.—Shell armlets excavated in the central vault, Nan-Tauach.
Fig. 5.—Scraper of cowry shell, used for stripping off the outer skin of the bread fruit.
„ 7.—String of shell discs, found in the central vault, Nan-Tauach.
„ 8.—Modern necklace of shell-beads, from Mortlock Island, for comparison with No. 7.
Figs. 9, 10, 11.—Bivalve shells pierced for suspension, Nan-Tauach.
„ 12, 18.—Shanks of pearl-shell fishhooks found in the central vault of Nan-Tauach.
„ 14, 17.—Pieces of shell pierced, Nan-Tauach.
Fig. 15.—Cowry shell pierced for ornamenting prows of canoes.
„ 19.—Portion of patkul or shell chisel.
Figs. 20–23.—Tablets engraved with characteristic patterns for Mr. Christian by Alek, of Ponatik, S.E. Ponape.

N.B.—All the specimens figured in Plates XXIII and XXIV are in the British Museum.

ANNUAL GENERAL MEETING.

JANUARY 24TH, 1899.

F. W. RUDLER, Esq., F.G.S., *President, in the Chair.*

The Minutes of the last Anniversary Meeting were read and signed.

The CHAIRMAN declared the ballot open, and appointed, as Scrutineers, Mr. S. E. Bouverie Pusey, and Mr. T. Hay Wilson.

The TREASURER read his Report for the year 1898.

The SECRETARY read the Report of the Council for 1898.

These Reports were adopted on the motion of the PRESIDENT, seconded by Mr. BRABROOK.

The PRESIDENT delivered his Anniversary Address.

It was moved by Professor THANE, seconded by Dr. GARSON, and unanimously resolved :—

> "That the thanks of the Meeting be given to the President for his Address, and that it be printed in the *Journal* of the Institute."

The SCRUTINEERS gave in their Report, and the following gentlemen were declared to be duly elected to serve as Officers and Council for the year 1899.

President.—C. H. Read, Esq., F.S.A.

Vice-Presidents.

H. Balfour, Esq., M.A. | A. J. Evans, Esq., M.A., F.S.A.
A. P. Maudslay, Esq., F.R.G.S.

Secretary.—Wm. Crooke, Esq., B.A.

Treasurer.—A. L. Lewis Esq., F.C.A.

Council.

W. M. Beaufort, Esq.
O. M. Dalton, Esq., M.A.
R. W. Felkin, Esq., M.D., F.R.G.S.
H. O. Forbes, Esq., LL.D.
J. G. Garson, Esq., M.D.
G. L. Gomme, Esq., F.S.A.
Wm. Gowland, Esq., F.S.A.
Prof. A. C. Haddon, M.A., D.Sc.
E. Sidney Hartland, Esq., F.S.A.
Col. Sir T. H. Holdich, K.C.I.E., C.B.
T. V. Holmes, Esq., F.G.S.
Prof. G. B. Howes, LL.D., F.R.S.
Sir H. H. Howorth, M.P., F.R.S.
Baron A. von Hügel.
Sir Hugh Low, G.C.M.G.
R. Biddulph Martin, Esq., M.P.
J. L. Myres, Esq., M.A., F.S.A.
J. Edge Partington, Esq.
Sir C. E. Peek, Bart., M.A., F.S.A.
Prof. A. Thomson, M.A., M.B.

Assistant Secretary.—J. Aplin Webster, Esq.

A vote of thanks to the retiring President, Vice-President, and Councillors, as well as to the Secretary, the Treasurer, the Auditors, and the Scrutineers, was moved, seconded, and carried by acclamation.

Treasurer's Report for 1898.

The income of the Institute for the year 1898 from ordinary sources was £584 8*s.* 2*d.*, being £34 10*s.* 10*d.* more than the income from the same sources in 1897, an increase which has been caused by our receiving three life subscriptions in 1898, as against two in 1897, and by the collection of a larger amount of arrears, a source from which I am in one sense happy to say we cannot expect to receive so much this year. The income properly belonging to 1898 amounts therefore in all respects practically to the same as that for 1897, but our bank balance has been increased by the sale of our Tasmanian skeleton and busts to the Natural History Museum for £115.

The actual payments during the year 1898 were £557 9*s.* 8*d.*, but the double number of the *Journal* which was published in November has not yet been paid for, although the Tasmanian, who was the original owner of the skeleton which we have sold, has provided us with the means of paying for it, an honour which of course he could neither have anticipated nor comprehended during his life. If the double number had been published in two parts in August and November as has been our usual custom, the August number would have been paid for in 1898, and the November number in 1899; so, in order to keep the accounts in proper shape for comparison, I have reserved £65 from the bank balance and added that amount to the actual payments for the *Journal*, bringing them up to £291 16*s.* 4*d.*, and the total expenditure to £622 9*s.* 8*d.*, which, though £23 15*s.* 6*d.* less than the expenditure in 1897, is £38 1*s.* 6*d.* in excess of the income for 1898, including life subscriptions.

ANTHROPOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND.

Receipts and Payments for the Year 1898.

RECEIPTS.	£	s.	d.	£	s.	d.
BALANCES, 1st January, 1898:						
Cash at Bank	71	18	4			
„ Petty	3	3	6			
	75	1	10			
Less balance of "Notes and Queries" account	39	19	1			
				35	2	9
SUBSCRIPTIONS:						
For the year 1898	359	2	0			
Three Life Compositions	63	0	0			
Arrears	42	0	0			
For 1899 in advance	6	6	0			
				470	8	0
SALE OF PUBLICATIONS:						
Messrs. Kegan Paul & Co. (July 1, 1897, to June 30, 1898)	77	14	10			
Office Sales	14	9	4			
				92	4	2
TASMANIAN SKELETON AND BUSTS SOLD				115	0	0
DIVIDENDS for one year on Metropolitan Consolidated 3½ per cent. Stock (less Income Tax)				20	6	0
INTEREST on Subscriptions in arrear				1	10	0
"ANTHROPOLOGICAL NOTES AND QUERIES":						
Balance as per last account	39	19	1			
Sales during 1898	2	16	3			
				42	15	4
"ANTHROPOLOGICAL NOTES AND QUERIES":						
New Edition				0	3	6
				£777	9	9

PAYMENTS.	£	s.	d.	£	s.	d.
RENT (including Coal and Gas) for one year to Michaelmas, 1898				135	0	0
PRINTING JOURNAL, Nos. 101, 102, and 103, including illustrations and Authors' copies	233	18	4			
Less received for special illustrations	£	s.	d.			
per Dr. E. B. Tylor	4	0	0			
O. M. Dalton, Esq.	1	0	0			
J. Ballot, Esq.	2	2	0	7	2	0
				226	16	4
Add:						
Reserved for proportion of double number	65	0	0			
				291	16	4
SALARIES AND COLLECTOR'S COMMISSION				89	12	2
HOUSE EXPENSES:						
Cleaning rooms, etc.	15	19	0			
Attendance and Refreshments at Meetings	21	0	0			
				36	19	0
STAMPS AND PARCELS				35	4	10
PRINTING AND STATIONERY				20	8	3
LANTERN (use of)				2	2	0
INSURANCE				1	10	0
REPAIRS, ETC.				4	16	6
BOOKBINDING				5	0	7
				622	9	8
BALANCES, 31st December, 1898:						
Cash at Bank	215	18	6			
Less reserved for proportion of double number of Journal as above	65	0	0			
	150	18	6			
Petty Cash	4	1	7			
				155	0	1
				£777	9	9

Examined and found correct,

(Signed) M. J. WALHOUSE, H. N. HUTCHINSON, } *Auditors.*

The cost of the *Journal* in 1894 was to £249, in 1895 £257 (for 5 numbers), in 1896 £204, in 1897 £325, and in 1898 £291; so that, although we have not paid quite so much for the *Journal* in 1898 as in 1897, we have paid considerably more than in the years 1894 to 1896, and I have no doubt that our Members feel that they are getting the benefit of that extra expenditure in the shape of a considerably improved *Journal*; but although the Tasmanian—more usefully employed perhaps after his death than during his life—is keeping us going for the present, it is evident from the foregoing figures that some means of bringing our income up to our expenditure, or our expenditure within our income, are very much to be desired.

The liabilities at the end of 1898 (other than our moral liability to life-members) were:—

	£	*s.*	*d.*
Rent, etc., for one quarter	33	15	0
Double number of *Journal*, illustrations, miscellaneous printing, and sundries...	158	6	2
Notes and Queries	42	18	10
	£235	0	0

The Assets at the same date were:—£600 Metropolitan 3½ per cent. Consolidated Stock (worth about £700), cash in hand and at the Bankers, £220 0*s.* 1*d.* some unpaid subscriptions, and the library, furniture, and stock of publications.

A. L. Lewis, *Treasurer.*

Report of the Council of the Anthropological Institute of Great Britain and Ireland for the Year 1898.

The Council have to report that during the past year eleven Ordinary Meetings, and two Special Meetings have been held, in addition to the Annual Meeting.

In February and May appeared Nos. 102 and 103 of the *Journal*, completing volume 27, the last of the first series. After much consideration the Council decided that in future the size of *Journal* shall be not demy octavo but imperial octavo.

In coming to this decision, they have not been unmindful of the disadvantages attending any alteration in size, but have felt that in this case the advantages far outweigh them. In the first place the new volumes will have a much more attractive general appearance; secondly, it will be possible to illustrate them much more effectively. Where the illustrations to the Journals of Scientific Societies are mainly of a diagrammatic kind there can be little, if any, advantage in an enlarged page. But the usefulness of an Anthropological Journal must always depend largely on

the abundance and variety of the pictures it contains. Sometimes it is important to show objects with as little reduction in size as may be practicable: in other cases it is highly desirable to exhibit a considerable number of things on a single page, in order that their various characteristics may be visible at a glance. Something may obviously be done to attain these results with a demy octavo page by means of folding plates. But the special liability of folding plates to be injured, even with the most careful usage, must always make their adoption an unfortunate necessity. And an enlarged page must very greatly reduce the need for their adoption.

In short, in improving the form of the *Journal*, the Council feel that they may claim to have considered alike the best interests of the Fellows of the Institute and the reputation of the *Journal* with students of Anthropology generally both in this country and abroad.

Owing to various circumstances, it was also decided that the first number of the New Series should not be published in August, but in November, as a combined August and November part. This double number contains 200 pages, imperial octavo, with 15 plates and many woodcuts.

Many valuable additions to the Library have been received during the year, and the Catalogue has been kept up to date.

Mr. J. L. Myres has done much during the year towards the classification of the large collection of photographs of various kinds in the possession of the Institute.

The following table shows the present state of the Institute as regards the number of its members, compared with its condition at the beginning of last year.

	Honorary.	Corresponding.	Compounders.	Ordinary.	Total.
January 1st, 1898	48	27	82	207	364
Since elected....	3	–	3	12	—
Deceased or retired	2	1	2	4	—
January, 1899	49	26	83	215	373

The following are the names of Fellows whose deaths have been reported during the year:—

Dr. E. Dally, Paris, Honorary Member.

M. Gabriel de Mortillet, Saint Germain-en-Laye, France, Honorary Member.

Right Honourable Sir George Grey, Bart., K.C.B.

Sir Henry Peek, Bart.

Major-General Woodthorpe.

ADDRESS DELIVERED AT THE ANNIVERSARY MEETING OF THE ANTHROPOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND, JANUARY 24TH, 1899.

By F. W. Rudler, F.G.S., President.

In soliciting your indulgent attention to a brief review of certain phases of anthropological progress during the past year, it is not without satisfaction to note at the outset that our Institute has played an honourable part in assisting this advance. The communications contributed to our Meetings during the session which has just closed may, I think, be compared favourably—whether in respect of number, of value, or of variety—with those of any average year. Every department of our many-sided science has in turn been presented to our Fellows; and the tastes of all have been consulted, without I hope undue prominence having been given to any special branch.

Probably the most interesting event to ourselves has been the issue of our Quarterly *Journal* under a new guise. Opinions may differ as to details; but on the whole the Institute is, in my opinion, to be distinctly congratulated on the more imposing form in which its communications are now given to the world. As the organ of the Institute, the *Journal* demands at all times our solicitous attention. To Fellows who are not resident in or near London the regular receipt of the *Journal* is the chief advantage of membership. The time has not yet come when absentees can participate in our proceedings through the aid of an electrophone, or any other physical medium; and they consequently have to wait until the appearance of our *Journal* before they really know what has gone on at our Meetings. Hence it becomes a matter of the first moment that the *Journal* should be issued with punctuality, and should not only contain the papers read at the Meetings, but also record the accompanying discussions, so as to fairly reproduce our actual proceedings. In both these respects there is admittedly room for improvement in the future.

No one supposes that the mere increase in the size of the page of our *Journal* will augment its scientific value. It is not the biggest people who always say the wisest things. A weak paper gains nothing in scientific importance by being printed in large type, with broad margin, on an ample page: but for all that, the style and size undoubtedly count for something with the reader, especially in the case of papers with graphic illustrations. In these latter days we have become so accustomed to find, even in cheap works, such a crowd of illustrations due to photo-lithography and process-work, that our members may fairly expect in the future that our *Journal* shall be more copiously illustrated than it has been in the

past. The advantage of a broad page will become more apparent when we find ourselves in the happy position of being able to illustrate our papers with an unstinting hand.

Considering our limited financial resources, it must be admitted that the *Journal* is very fairly treated. From the account which our Treasurer presented last year, and which was published in our May number, it appears that 50 per cent. of our total expenditure in 1897 was appropriated to the *Journal*. It is true that this amount was above the average; but it is to be hoped that in future by an increased income, a yet larger sum may be available for our publications.

One obvious way in which our *Journal* could be materially improved, if funds permitted, would be by the regular publication of an epitome of the World's Work in Anthropology. In no English journal have we a systematic review of anthropological literature in any way comparable for instance with the valuable collection of classified *Referate* in the *Archiv für Anthropologie*. Students of other branches of science in this country are not in this unfortunate position. The chemists for instance have their portly volume of "Abstracts of Papers"; the zoologists possess their annual "Record"; the Civil Engineers find a large part of their "Proceedings" devoted to abstracts of papers; the geographers receive in their monthly journal a regular summary of progress; and it would be well if our "Miscellanea" could be so expanded as to give a systematic quarterly survey of anthropological literature.

Experience, however, convinced me many years ago, when working on quite another subject, that it is practically impossible to organise a body of honorary contributors who can be relied upon for regular work of this kind. A volunteer will readily enough write an abstract of a paper in which he happens to be personally interested, but such work remains more or less capricious; and few people care to undertake the drudgery of wading through long memoirs in which they have no special interest. Such work can never be systematically and satisfactorily done unless it is undertaken in a professional manner by a staff of paid contributors. At present such a scheme lies far beyond our scope, but there is surely no reason why it should always remain there.

Many years ago General Pitt-Rivers remarked from this Chair that "the Anthropological Institute has only to be properly worked in order to become one of the most prosperous societies in the country." Unfortunately the Institute has had since then to struggle with a succession of adverse circumstances, especially with a sadly inadequate income. Money is practically the real index of our working power, but our excellent Treasurer, who so judiciously manages our finance, finds himself all too soon at the bottom of our purse. If the *Journal* is not to suffer from a chronic state of semi-starvation, but is to enjoy such generous treatment as will enable it to develop its full powers, it is imperative that we should increase our regular income; and the obvious way to do this is by the introduction of new members. There ought not to be the slightest difficulty here, for the British Empire is surely a sufficiently ample collecting ground. At the

present time, however, out of the three or four hundred million inhabitants of this Empire, it appears that about 300 individuals have thought it worth while to attach themselves to our Institute, the one central British organization which is specially devoted to the scientific study of Man. The proportion does not strike one as excessive; and I hope that I shall not be considered unreasonable if I venture to say that it ought to be increased at least ten-fold. With 3,000 members, instead of 300, the Anthropological Institute would have a fair chance of exhibiting to the world what it could do; and I fancy the world would not be dissatisfied with the exhibition.

Looking at the character of the subjects, so diverse and so interesting, discussed at this Institute, it might naturally be assumed that people would anxiously press forward, and enrol their names in our list of Fellows. But as this assumption is hardly supported by fact, it is curious to inquire how it comes about that, as a body, we are not exactly popular.

It seems to me probable that people stand aloof from the Institute for two opposite reasons—some holding that our studies are too specialised, and others that they are not specialised enough. The one set regards Anthropology as a formidable branch of biology—its very name a stumbling block—representing a science to be comprehended only by those who have had the advantage of special training; whilst the other group regards Anthropology as an incoherent assemblage of odds and ends of knowledge, not yet sufficiently systematized to rank as a distinct science. The popular mind seems, in fact, to be in rather a nebulous state as to what is, and what is not, Anthropology.

For a good deal of this haziness anthropologists have themselves to blame. The term Anthropology has been used, and is still used, both in a narrow and in a wide sense. This Institute, it is true, has always accorded to the term its most expanded definition, so as to include a scientific knowledge of Man in his entirety, physical and psychical, past and present. But, as we all know, certain schools have employed the term in a much more restricted sense.

A notion has got abroad in certain quarters that Anthropology is a special branch of natural history dealing only with the physical constitution of man, and is consequently too technical a study for those who have not had the advantage of scientific training in human anatomy and physiology. It is true that some of the most valued contributions to this Institute relate to man's bodily structure; but these are only too rare, and surely the occasional reading of a paper which requires severe study of a special character for its due appreciation ought not to prove in any way a barrier to membership. Does any one stand aloof from the Royal Geographical Society because he happens to be unacquainted with the mathematical mysteries of map-making? And just as a man who may be ignorant of surveying and cartography finds abundance of interest in other departments of geography, so he who is ignorant of anatomy has only to turn over the pages of our *Journal* in order to find no lack of interest in the many other departments of anthropological inquiry.

It has often been pointed out that the Science of Anthropology, or the

systematic study of Man, drops naturally and neatly into two parts, which are distinguished in our little volume of *Notes and Queries* as *Anthropography* and *Ethnography*. This duality of the subject is emphasised, for instance, by the authorities of the British Museum, who put a sharp interval of three or four miles between the collections of Anthropography at South Kensington and those of Ethnography at Bloomsbury. The student of Biology, seeking acquaintance with the physical constitution of man, visits one branch of the museum, whilst the student of Sociology, occupied with the study of human institutions, confines himself to the other department.

Seeing, then, that Anthropology opens up two distinct lines of study, it might fairly be assumed that the Institute has a double chance of success. By appealing to students of diverse tastes, it ought to attract an exceptional number of adherents—especially as that branch which deals with the development of human culture is a popular, fascinating, and readily-approachable study.

Addressing the Institute from this Chair, fifteen years ago, Sir William Flower declared that "a national collection of illustrations of the physical characters of the races of men . . . is still a desideratum in this country." What he has himself since done to supply this deficiency may be seen by any visitor to the Upper Mammalian Gallery of the Natural History Museum, under the care of Mr. Oldfield Thomas. Although much yet remains to be accomplished before an anthropological collection worthy of the country is obtained, a fine nucleus has already been formed by the accumulation in this gallery of a most valuable series of skulls, skeletons, casts, life-size models, samples of hair, photographs, drawings, and distributional maps; whilst the accompanying explanatory labels form by themselves an excellent introduction to the study of the chief varieties of mankind. It is earnestly to be hoped that the foundation of an Anthropographic Collection thus laid by Sir William Flower, with the assistance of Mr. Lydekker, will not be allowed to remain in its present state, but that the distinguished naturalist who has now charge of the Natural History Museum will erect upon it a structure that shall ultimately realize in full Sir William's long-cherished ambition of a grand National Collection.

In connexion with Sir W. Flower's services to anthropological science I may remind you of the recent publication of a collection of his Essays and Addresses, including one of the presidential discourses which he delivered at this Institute, and two which he gave to the Anthropological Section of the British Association at the York and Oxford meetings. Although Dr. Garson has noticed this work in the last number of our *Journal*, I may here be permitted to remind the Fellows that Sir William's sympathetic reference in his British Association Addresses to the work of the Anthropological Institute will now attract renewed attention, and ought to bring our claims before a large circle of readers. When an address is decently buried in one of the thick brown-backed volumes of the series of British Association Reports, it is apt to drop out of memory; and consequently the

resuscitation of Sir W. Flower's Addresses by this re-publication is likely to be a distinct advantage to the Institute.

While referring to anthropology as represented in museums attention may be fitly called to the new Anthropological Gallery at the Paris Museum, a description of which appeared in a recent number of *L'Anthropologie.* The lower part of the new building is devoted to Palæontology, illustrating, so far as the imperfection of the record permits, the progress of life throughout the geologic ages. Above this is the Gallery of Comparative Anatomy, where the student of anthropology may find food for reflection in the excellent series illustrating the structure of the anthropoid apes. Then in the upper story is the Gallery of Anthropology, arranged under the care of Professor Hamy. According to M. Verneau it has already been found that the space allotted to anthropology is sorely inadequate to its needs; so that only a comparatively small part of the treasures can be publicly exhibited. Moreover, the difficulty of exhibition has been increased by the recent addition of the valuable and extensive collection of prehistoric antiquities of the late Marquis de Vibraye.

In a review of the published works of our own Fellows during the past year, the first place must, in my opinion, be unhesitatingly accorded to the noble volume which General Pitt-Rivers has issued, as the fourth instalment of his monumental work descriptive of those researches which he has so long been carrying on in Cranborne Chase. What immediately strikes the reader in looking through this remarkable record of research is the evidence it affords of the strictly scientific spirit in which the investigations have been conducted. Throughout General Pitt-Rivers's explorations he has never spared pains to secure the greatest possible thoroughness and accuracy in all details of the work. Every object, however trivial, found in the course of the exploration is preserved, and the depth at which it occurred is determined and recorded. Just as geologists, with the growing exactitude of their science, record not merely the formation but the particular horizon at which a fossil is found, so General Pitt-Rivers insists on the necessity of determining by precise measurement the position of each object discovered in the excavation. The care and minuteness with which he now studies the relics that he exhumes is well illustrated by his systematic classification of the pottery. After an experience of seventeen years he is able to use the fragments of pottery as valuable aids to determine the age of the deposit in which they occur; hence the need of rigorous precision in marking their position. A fragment of pottery thus becomes to the archæologist what a characteristic fossil is to the geologist: it enables him (unless it chances to be *remanié*), to determine the chronological position of the deposit in which it occurs, or at least its place in a chronological sequence. Geologists know to their cost that fossils have occasionally been assigned to false horizons, in consequence of having fallen from one level to another. In like manner General Pitt-Rivers is fully aware of the danger of confusion among archæological relics; and hence he adopts a method of digging which precludes any possibility of error as to stratigraphical position.

Observations made with such exemplary care are recorded in a manner equally precise and systematic; and the result is a series of magnificent volumes, worthy alike of the work and the workman.

It might not unnaturally be assumed that I should take the opportunity on this occasion of referring to that department of anthropological study in which geologists are specially interested. But as a matter of fact, the geological aspect of prehistoric archæology has been so fully discussed of late that there seems little room, in the present state of our knowledge, to say more. As a proof of the interest which geologists are taking in the discovery of the relics of early man, I may mention that the subject was selected as a fit topic for anniversary addresses last year by the presidents of the two metropolitan societies devoted to the study of geology—the Geological Society of London and the Geologists' Association.

Dr. Henry Hicks, F.R.S., in retiring from the presidential chair of the Geological Society last February, delivered a valuable address "On the Evidences of the Antiquity of Man furnished by Ossiferous Caverns in Glaciated Districts in Britain." His own researches at the Ffynnon Beuno and Cae Gwyn Caves, in the Vale of Clwyd, led him, some years ago, to the conclusion that man lived in that part of the country at a time which may be regarded as pre-glacial. He holds that the remains of extinct mammalia found in these high-level caves must have been introduced either before any of the associated glacial deposits could have been laid down, or, at latest, in the early part of the glacial period, before there was any considerable accumulation of snow on the mountains or any great glaciers in the valley. Reviewing the recent course of geological opinion in this country, it must be admitted, I think, by any unprejudiced observer, that there is a growing opinion in favour of man having existed in the British area in times which, if not strictly pre-glacial, may, at least, be called inter-glacial.

Turning now to the other metropolitan organization for the promotion of the study of geology—the Geologists' Association—we find that Mr. E. T. Newton, F.R.S., on relinquishing the presidential trust in February, delivered an interesting discourse on "Palæolithic Man," supplementary to his address of the previous year on "Tertiary Man." Although Mr. Newton, with characteristic caution, is not prepared to assent to the existence of man during the Tertiary period, he believes that we have found in this country the fossil relics of man's bony framework in deposits of undoubted pleistocene age. The Galley Hill skeleton, which he described some years ago, is probably the most ancient human relic yet unearthed in Britain.

Since the late Sir Joseph Prestwich called the attention of this Institute, in 1892, to the curiously-chipped brown-coloured flints found by Mr. Benjamin Harrison on the chalk plateau of Kent, these flints have become a centre around which very animated discussion has frequently been waged. One of the latest contributions to this interesting subject is a paper read before the Geological Society last April, by Mr. William Cunnington—a gentleman whose ripe judgment

on geological subjects commands our respect. The great antiquity of the flints is suggested, first, by their occurrence in connection with the so-called "Southern Drift," which, it is believed by most geologists, must have been formed before the erosion of the local valleys; and secondly, by the very crude character of the chipping. Mr. Cunnington, however, refuses to regard the flints as pre-palæolithic, or "Eolithic"; but believes that the deposits in which they occur are of true palæolithic age whilst the marginal chipping of the flints, on which so much reliance has been placed, is, in his opinion, due to natural causes.[1]

Mr. Cunnington's scepticism upon this subject had previously found expression in the pages of *Natural Science*, where replies to his arguments were published last February by the Rev. R. Ashington Bullen and by Mr. W. J. Lewis Abbott.

In a highly suggestive paper, contributed a short time ago to the Royal Archæological Institute, our distinguished member, Professor T. McK. Hughes, dealt critically, as only a geologist could deal, with the evidence bearing upon the early history of man, as deduced from the form, the condition of surface, and the mode of occurrence of dressed flints. He knows no evidence which would justify the inference that any implements older than the palæoliths have yet been found. It is sometimes assumed that evidence of design is shown by the frequent recurrence of similar forms in a series of chipped flints, but the Professor holds that "the design is in the selection of accidental forms, not in the manufacture of serviceable implements."[2]

As further evidence of the keen interest which is at present taken in the connexion between geological and archæological topics, I may refer to the address which our valued Fellow, Dr. Robert Munro, delivered last July before the Antiquarian Section of the Royal Archæological Institute at the local meeting at Lancaster. In this able discourse on "The Relation between Archæology, Chronology and Land Oscillations in Post-Glacial Times," the author discusses the connexion between variations of climate and the movements of the earth's crust in these latitudes since the Glacial Period. Assuming that a chronology can be established on an astronomical basis, he applies the results to the determination of the date of certain archæological phenomena; and it is interesting to find that the conclusions thus deduced fairly agree in certain cases with those obtained by calculations based on evidence of quite a different character. Dr. Munro finds much to support his views in the remarkable researches of Dr. Nüesch at the Schweizersbild, near Schaffhausen.

At the rock-shelter of the Schweizersbild, a gravel bed, of fluvio-glacial origin, is covered by a deposit enclosing the remains of an Arctic fauna, which Dr. Nehring shows to be characteristic of the Tundras, or treeless wastes of Arctic lands. Whilst this was in course of accumulation palæolithic man took refuge in the shelter, and has left there such relics as would be referred in the French caves to the so-called "Reindeer period." A yellow-stained bed above this Arctic

[1] *Quart. Journ. Geol. Soc.*, vol. liv, 1898, p. 291.
[2] *The Arch. Journ.*, vol. liv, 1897, p. 362.

deposit is rich in relics referable to the latter phase of the reindeer age, associated with a sub-Arctic fauna which Nehring correlates with that of the steppes. In the overlying layer, or "breccia-bed," a gradual transition may be traced from the steppe conditions to those of the Forest period; the cold, dry climate of the steppes giving way to a milder and damper climate, favourable to forest-growth, and leading upwards to deposits of the Neolithic period, with remains of *Bos longifrons* and other neolithic types. Dr. Nüesch fixes the earliest appearance of man in this district at not less than 20,000 and not more than 29,000 years ago.[1]

To those who have not watched the recent course of geological opinion on the physical conditions which probably prevailed during the Palæolithic period, Dr. Nüesch's frequent reference to the "steppe fauna" may perhaps need a word of explanation. It may therefore be useful to remark that—as a consequence of the researches of Nehring, Liebe, Woldřich, Engler, and other workers—an opinion has been gaining ground among geologists that the Glacial epoch was succeeded in parts of the northern hemisphere by a period of dry cold, when the climate of Central Europe must have borne much resemblance to that of the arid wastes of Central Asia at the present day. This age is sometimes called the "Steppe period." The curious deposit known as loess, so extensively distributed over the northern part of China, was described many years ago by Baron Von Richthofen, at present the distinguished Professor of Geography in Berlin, as an æolian deposit, formed of dry dust, blown from the deserts of Central Asia. Similar loess occurs widely spread over parts of Europe, forming an unstratified deposit of yellowish loam, probably derived in large measure from glacial mud, with numerous land-shells and mammalian bones. Professor Alfred Nehring, of Berlin, after a careful study of the loess fauna, some years ago pointed out its relation to that of the steppes.

In this country, so near to the western seas, it is hardly to be expected that we should find any accumulation of wind-wafted desert dust; but it is of extreme interest to find relics of the steppe fauna even in Britain. In the lists of pleistocene mammals from our bone-caves and river-drifts, published many years ago by Professor Boyd Dawkins, in several of his valuable writings, there may be found many steppe animals duly recorded. Mr. E. T. Newton's careful study of the mammalian remains from the fissures in the Kentish Rag of Ightham, in Kent, so skilfully explored a few years ago by Mr. J. Lewis Abbott, has shown the presence in the south-east of England of a fauna containing, with many Arctic forms, certain sub-Arctic species pointing unmistakably to steppe conditions. Then again, part of the skull of the Saiga antelope, a most characteristic member of the steppe fauna, was found a short time ago at Twickenham by Dr. Leeson, and has been described by Mr. A. Smith Woodward. Such discoveries go far to

[1] *The Arch. Journ.*, vol. lv, 1898, p. 259. It may be mentioned that an excellent description of the rock-shelter at the Schweizersbild, by Professor James Geikie, will be found in the *Scottish Geographical Magazine* of September, 1897. (Vol. xiii, p. 466.)

substantiate the views of my colleague, Mr. Clement Reid, who very ably argued long ago in favour of the former existence of a steppe climate in Britain.

As anthropologists, it is interesting to recall the fact that the former westward extension of the conditions now prevailing in the Eastern steppes, was pointed out by Dr. Woldřich, of Prague, as far back as 1882, in a paper read before the Anthropological Society of Vienna, and published in the second volume of the Society's *Mittheilungen.* Other papers on the subject, printed elsewhere, are of yet earlier date.

So commonly received has this view now become that we find Mr. J. E. Marr, of Cambridge, in an excellent geological text-book, published a few weeks ago, recognising in late Tertiary times, first a Glacial period, then a Steppe period, and afterwards a Forest period; and he says, "roughly speaking the Steppe period corresponds with the period during which Palæolithic man existed, at any rate in north-west Europe."

It appears then highly probable that on the amelioration of climate at the close of the Great Ice Age, when the glaciers and the ice-fields melted away, an Arctic fauna was gradually displaced by a sub-Arctic fauna, resembling that of the steppes; the dry climate then slowly gave way to a humid climate favouring the growth of arborescent vegetation, and leading to a great development of forest growth during the Neolithic period.

One of the most distinguished Fellows of this Institute, Sir Henry Howorth, F.R.S., who takes so keen an interest in the relation between Geology and Anthropology, has suggested in the pages of *Natural Science* a new scheme for grouping and naming the subærial post-pliocene deposits of this country.[1] He uses the term *Anthropozoic* as a convenient designation for all the deposits from the base of the Cromer Forest-bed upwards, because he believes that they form a group "marked by the presence of Man and his works *all through*, and that Man is in effect a very good type-animal by which to ear-mark the series." It will thus be seen that Sir Henry accepts the evidence of the existence of man in this area during the period of the Norfolk Forest-bed. The separation of the human period into two divisions is generally admitted, but objecting to the terms palæolithic and neolithic, he proposes others based on the character of the animal-life of the period. As the earlier phase is characterised by the presence of wild animals only, and the latter by the existence of domesticated species, Sir Henry proposes to term them respectively *Theriozoic* and *Himerozoic.*

The Theriozoic period is itself divisible into two stages. In the older stage we find such extinct mammalia as *Elephas meridionalis, Rhinoceros etruscus, Ursus arvernensis, Trigonotherium Cuvieri,* and a series of extinct deer. The latter part of the Theriozoic period is characterised by the introduction of the reindeer and by certain steppe animals, like the Saiga antelope. Then, passing upwards through the Drift, into the deposits of Himerozoic age, Sir Henry Howorth suggests a

[1] "A New Scheme of Geological Arrangement and Nomenclature." Part IV. *Natural Science,* April, 1898, pp. 261–270.

division into two groups according as they are pre-Roman or post-Roman; the coming of the Romans into the British area being accepted as an event sufficiently important to represent a break in the classificatory system.

The difficult question as to the apparent gap between the palæolithic and neolithic periods, which has been so ably discussed in this country by Professor Boyd Dawkins, Dr. Munro, Mr. Arthur J. Evans, Mr. Allen Brown, and others, has been also a subject of much discussion recently on the Continent. My friend, M. Rutot, the accomplished Curator of the Royal Natural History Museum in Brussels, who has given much study to the later geological deposits in Belgium, published, a short time ago, his belief that no hiatus exists there, but that the Belgian area has been continuously inhabited by man since palæolithic times.*

It is a welcome sign of the progress of anthropological studies that one of our most ancient seats of learning should have organized an expedition such as that which left Cambridge in the early part of last year, under Professor Haddon. From a letter published in *Nature* (December 22) we learn that at the time the communication was despatched, last November, the investigation in Torres Strait had been completed; that a contingent had made a scientific trip to New Guinea, and that several of the members had proceeded to Borneo to study the anthropology of the Baram District of Sarawak. The Murray Islanders, with whom the Rev. Mr. Hunt's paper in the last part of our *Journal* has already made us acquainted, were studied in great detail; and as these have been, by reason of their isolation, less modified by contact with alien races than is usually the case, their study seems to have peculiar importance. As the expedition was furnished with the latest scientific appliances, we may expect that information will be brought home of an exceptionally interesting character.

The pressing necessity of instituting careful anthropological researches among uncultured peoples is every day becoming more evident. By contact with the missionary, the merchant, and the miner, these peoples are rapidly losing their primitive condition, and our opportunities of observation are consequently becoming more and more contracted. While rejoicing at the progress of civilization, the anthropologist feels that the dark places of the earth are precisely those places most likely to throw light upon many problems of the prehistoric past. Hence his keen interest in all exploratory work, provided he is assured that the explorers are competent to observe with scientific accuracy and willing to record their observations without distortion. The Cambridge expedition is in these and other respects a model which, it is hoped, may be copied in other quarters.

Anthropological science is further indebted to our esteemed member, Professor Haddon, for having recently contributed to "The Progressive Science Series" a

* "Les conditions d'existence de l'homme et les traces de sa présence au travers des temps quaternaires et des temps modernes en Belgique." *Bulletin de la Société d'Anthropologie de Bruxelles*, tome xvi, 1897-98.

volume on *The Study of Man.* The skilful and attractive manner in which he presents the study ought to enlist the sympathy of many who might be repelled by a more formal treatise; and it may be hoped that his "Practical Suggestions for Conducting Ethnographical Investigations in the British Islands" will be the means of securing observations of substantial value to science. Every honest attempt to bring a knowledge of anthropology and its methods before the public ought to receive a hearty welcome at this Institute.

In the *Proceedings of the Royal Irish Academy* for last December,[1] Dr. Charles R. Browne has published the results of his ethnographic survey of Clare Island and Inishturk—two islands at the mouth of Clew Bay in co. Mayo. This investigation formed the fifth of the local ethnographic surveys, which are now conducted annually as a part of the work of the Anthropological Laboratory at Trinity College, Dublin.

The people examined are described as presenting, on the whole, the same physical types as those of the opposite coasts of Mayo; but, as is to be expected in the case of islands, there is more uniformity in their appearance. It is believed that there has been no great change in the composition of the population during the last three or four centuries, and that the bulk of the people are descended from the ancient inhabitants of this part of Connaught.

Those who had the advantage of hearing Professor Baldwin Spencer's admirable address in this room during his short visit to England in December, will expect to find a work of exceptional merit in the volume on *The Native Tribes of Central Australia,* with which he has just enriched the literature of anthropology. Professor Spencer has been associated in the preparation of this work with his friend Mr. F. J. Gillen, whose long residence in Central Australia has given him a knowledge of the natives perhaps unequalled. Mr. Gillen's observations and Professor Spencer's scientific deductions have combined to produce, in my opinion, one of the most valuable works which have lately found their way to the library of the anthropologist.

Among the recent publications in this country tending to stimulate the study of anthropology among the people, mention should be made of Mr. A. J. Butler's translation of Professor Ratzel's *Völkerkunde.* Under the title of *The History of Mankind,* the work has been issued in serial form, extending over a space of between two and three years. Now that it is completed it forms three handsome volumes, richly illustrated, and having its value enhanced by an Introduction contributed by Professor E. B. Tylor, F.R.S. By the publication of popular works of this kind the Institute becomes more or less benefited, inasmuch as they tend to quicken an interest in the science and increase the number of those who sympathise with our objects.

[1] "The Ethnography of Clare Island and Inishturk, co. Mayo." By Charles R. Browne, M.D. *Proc. R. Ir. Ac.*, 3rd series, vol. v, No. 1, December, 1898, pp. 40–72.

At the summer meeting of the London Society for the Extension of University Teaching, held last spring at the University of London, Sir John Evans, F.R.S. popularised the subject of prehistoric archæology by delivering an admirable lecture on "London before the Saxons," in which he dealt with prehistoric man in the south-east of England.

This Institute always views with much interest the proceedings of the British Association, and it is therefore satisfactory to refer to the brilliant session of 1898, where anthropology was so ably cared for under the presidency of Mr. Brabrook, C.B. I find myself relieved, however, from the necessity of dealing in detail with any part of the proceedings at Bristol, since Mr. Myres has contributed to our *Journal* a masterly epitome of the anthropological work of the session. It may be noted with satisfaction that the money grants to committees entrusted with work of an anthropological character reached the substantial sum of £200. From some of these Committees, such as that on the Teaching of Anthropology, under the chairmanship of Professor Tylor, much good work may be expected.

Reference was made by my predecessor last year to the possibility of bringing the Anthropological Institute into closer relationship with the Folk-Lore Society. To that end a joint committee was appointed, but as its deliberations are still pending, it would be premature to refer to them in this place. Whatever may be the ultimate result—whether the two Societies agree to amalgamate, to co-operate or to maintain their present individualities—it will not be out of place, I think, for the Anthropological Institute on this occasion to offer its congratulations to the Folk-Lore Society on the attainment of its majority. When the Society was founded, 21 years ago, Sir John Evans welcomed it from this chair; and its growth and development have fully justified the prediction which he made as to its usefulness in a special sphere of anthropological study.

As an indication of the growing interest in anthropological science on the Continent, it is pleasant to record the foundation of another Society for its cultivation. On the 30th of April, 1898, was founded in Holland the *Nederlandsche Anthropologische Vereenigung*, a Society for the study and advancement of anthropology in its widest sense. The first President is Dr. C. Winckler, Professor in the Medical Faculty of the University of Amsterdam; the Vice-President is our Honorary Fellow Dr. Eugene Dubois, who has been appointed Professor of Geology in the same University; the Secretary is Dr. J. Sasse, of Zaandam; and the Treasurer Dr. Kerbert, Director of the Zoological Gardens in Amsterdam. To the young Society we venture to offer our best wishes for a vigorous growth and a successful career.

Before bringing these desultory remarks to a conclusion, it becomes my melancholy duty to refer to the losses which our Institute has suffered during the past year by the death of several of its prominent members.

The Right Honourable Sir George Grey, F.R.S., who passed away at the

ripe age of eighty-six, was one of our original Fellows, having been a life-member of the pre-existing Ethnological Society, to which he was elected as far back as 1860, and whence he passed to the Anthropological Institute at its formation. Without referring to his remarkable career as a bold and successful Colonial Administrator, it is sufficient here to recall briefly his services to anthropology. In whatever distant part of the Empire Sir G. Grey found himself officially located, he turned sympathetically to the native races, studying with keen interest their language, their character, customs and mythology. The natives, in turn, recognized the genuine interest which he took in their welfare, and cheerfully gave him their confidence and in many cases an extraordinary measure of devotion. More than half-a-century ago, when hurriedly despatched to New Zealand at a crisis of imminent peril, he not only reconciled the Maories but by his tact and justice rapidly gained their respect, which eventually ripened into real affection. Unaided by dictionary or grammar, he acquired a marvellous command of their language; and in 1855 published his valuable work on *Polynesian Mythology and Traditions of New Zealand*, a work which was followed, three years afterwards, by his *Proverbial Sayings of the New Zealand Race*. In South Africa, too, his influence with the native races was almost equally remarkable. Nor should his early exploratory work in Australia be forgotten. As far back as 1841 Sir G. Grey published his *Journals of Discovery in Australia*, a volume which had at the time much ethnological interest. Our own *Journal* unfortunately does not contain many communications from his pen; but when in England he was occasionally present at our meetings, and I well remember his joining in our discussions. Sir George Grey died at Kensington on September 19, and was buried in St. Paul's Cathedral, with such honour as was due to one who had by his personal power contributed so largely to the building up of the British Empire in the Seas of the South.

By the death of SIR HENRY PEEK, BART., the Anthropological Institute has lost a valued friend, who took a genuine interest in its proceedings, and who will be remembered as having been, in recent years, a frequent attendant at our meetings. The death occurred during the summer recess, but the Council on reassembling took the earliest possible opportunity of recording its sense of the loss which the Institute had suffered, and of offering its respectful sympathy with his son, Sir Cuthbert Peek, to whose services the Institute has been in many ways so signally indebted.

Unfortunately there has recently dropped from our roll of Fellows the name of MAJOR-GENERAL ROBERT GOSSETT WOODTHORPE, C.B., R.E.—an original observer of rare ability—who passed away last May at the age of only fifty-three. His explorations on the northern and eastern border of India brought him into contact with the frontier tribes, and our *Journal* testifies to his intimate knowledge of the wild people of the Naga Hills. In the early part of his career he served successively in the Lushai Expeditionary Force (1871–72), in the Garo Hill Expedition (1872–73), and in the Naga Field Force (1875–76). Subsequently he distinguished him-

self in the Afghan Campaign under General (now Lord) Roberts. Among other incidents in Woodthorpe's varied career may be mentioned the part he took in exploring a part of the basin of the Irriwadi River: he was afterwards attached to the mission to the Pamirs and Badakshan: at one time he had charge of the Intelligence Department at Simla: he conducted the surveys for the Anglo-Siamese Boundary Commission, and he subsequently had command of the Mekong Commission Survey. His last contribution to this Institute was a valuable paper on the "Shans and Hill-tribes of States on the Mekong." At the time of his death he was at Calcutta, acting as Deputy-Surveyor-General. In General Woodthorpe great skill as a surveyor was coupled with much talent as a draughtsman, and many of his sketches have been reproduced in our *Journal*. A man of great scientific ability, his explorations added much to our knowledge of geography and ethnography, whilst his charm of disposition endeared him to all who had the advantage of personal relations with him. An appreciative memoir, from the pen of his friend Sir Thomas Holdich, will be found in the *Geographical Journal* for last August, where an excellent portrait serves to recall the genial features which those of us who knew him would not willingly allow to fade from our memory.

It is with unfeigned regret that I have to include in the list of members who have recently passed away in the course of nature, the name of MISS ANNE WALLBANK BUCKLAND. At a Special Meeting of this Institute held on March 9, 1875, a proposition, introduced, if I remember rightly, by General Pitt-Rivers, to admit ladies as members, was carried; and Miss Buckland was not slow to avail herself of the privilege of admission. For some three-and-twenty years her name has consequently been standing on our roll of Fellows. Nor was her membership a mere formal matter. The keen interest which Miss Buckland took in all branches of anthropology attracted her to our meetings, where—as well as the anthropological section of the British Association—she was a regular attendant, accompanied by her devoted friend Mrs. Carey-Hobson. Ever ready to take an active part in our discussions, Miss Buckland will long be remembered in this Institute; whilst successive volumes of our *Journal* bear ample testimony to her devotion to the science, and her desire to elucidate some of its perplexing problems. The industry with which she wielded her skilful pen may be seen in her essays on such varied subjects as primitive agriculture, prehistoric monuments, serpent-worship, rhabdomancy and belomancy, the mythology of birds, tattooing, neolithic surgery, the use of stimulants among savages, prehistoric intercourse between the West and the East, etc. Under the title of *Anthropological Studies*, Miss Buckland published, in 1891, a work which consisted chiefly of essays which she had contributed to our *Journal* and to the *Westminster Review*; and it is pleasing to recall the fact that the volume in question bears a dedication "to the President, Vice-Presidents, and Council of the Anthropological Institute of Great Britain and Ireland." At the time of her decease Miss Buckland was engaged upon the preparation of another anthropological volume, to be entitled *Fossils of a Vanishing Faith, or Necromantic Survivals.* No other lady in this country has, to my know-

ledge, done so much to popularize anthropology as was accomplished by our valued friend; and it was, to many of us, a matter of profound satisfaction when, in consideration of her services, she was placed a few years ago on the Civil List. Miss Buckland unhappily did not long enjoy her pension. She died at her residence at West Kensington on January 4th, at the age of sixty-seven.

Turning to our List of Honorary Fellows, it is my painful duty to record the death of PROFESSOR DE MORTILLET, who was known personally to many of us. Louis Laurent Gabriel De Mortillet was born at Meylan, in the Department of Isère, on August 29, 1821, and had therefore reached, at the time of his decease, the seventy-seventh year of his age. After much scientific work in early life, connected with geology and conchology, he rendered conspicuous service at the Paris Exhibition of 1867 by his organization of the Prehistoric Section. Soon afterwards he was appointed to the charge of the famous museum at Saint-Germain-en-Laye. Mortillet was one of the first Professors at the School of Anthropology founded by Broca; he was a past-president of the Anthropological Society of Paris, and a copious contributor to the Society's *Bulletin*. Without reciting the titles of his numerous publications, it is sufficient here to recall his two works entitled *Le Musée préhistorique* (1881) and *Le Préhistorique* (1883). It should be added that he founded, in 1864, the useful review known as the *Matériaux pour l'histoire primitive et naturelle de l'homme*, and twenty years later another serial entitled *L'Homme*, both of which became merged in *L'Anthropologie*. Professor De Mortillet was a man of extraordinary energy, who had, in his day, played many parts, having been not only a man of science, but a man of affairs and an active politician.[1]

Our roll of Honorary Fellows has been further impoverished by the loss of so distinguished a name as that of PROFESSOR HERMANN WELCKER, of Halle. Although he died on September 11, 1897, I may be pardoned for referring to him in this place, inasmuch as the death accidentally escaped record last year. Dr. Welcker will be remembered by his numerous original contributions to physical anthropology, especially by his study of the skull. He co-operated with Professors Ecker and Lindenschmidt and other anthropologists in founding, in 1866, the *Archiv für Anthropologie*, a journal which he enriched by a number of valuable papers; his last essay having been published there last spring, as a posthumous paper. Professor Welcker, at the time of his death, was in the seventy-sixth year of his age.

Before stepping down from the position to which your suffrages elevated me a year ago, I desire to acknowledge in most grateful terms the indulgence with which you have tolerated my own shortcomings in the conduct of our affairs, to no one more painfully evident than to myself. I am also anxious to take this opportunity of expressing my sense of obligation to those who have officially assisted me in the

[1] The eloquent tributes to Mortillet's genius, pronounced by M. Hervé and Dr. Capitan at the first meeting of the Anthropological Science of Paris after the autumn recess, were published in the *Bulletin* after this sketch was written.

management of our business;—to the Council and its various Committees for loyal support; and to the Treasurer, the Secretary and the Assistant Secretary for their efficient aid. Nor should I omit to acknowledge my indebtedness to Dr. Garson for the valuable work which he has personally carried on in our Library, and for the assistance which he has so frequently rendered at our evening meetings by his skilful manipulation of the lantern, when optical illustrations have been needed.

It is with peculiar gratification that I now find myself privileged to transfer my trust to the custody of one who has for so many years, and in such a variety of ways, rendered conspicuous service to our Institute. Mindful of Mr. Read's wealth of knowledge and readiness of resource, coupled with his geniality of disposition, I feel abundantly justified in predicting that his occupancy of this chair will be marked by exceptional ability and activity. His official position as custodian of our national collections illustrative of Ethnography and Prehistoric Archæology, gives him unrivalled opportunity of accumulating information with regard to these important branches of Anthropology, whilst it brings him into immediate relation with the most recent explorers, from whom original communications for our meetings may be obtained. It is therefore with much reason that I hail Mr. Read's accession to the office of President as an event likely to inaugurate an era of prosperity to the Institute. There is, in my opinion, a potential power in this Society which has never yet been realized; but I look forward to the time, which I think need not be far distant, when its fine possibilities shall be developed; when the Anthropological Institute, under able management, shall take that position to which it is fairly entitled by the importance of its studies, and when it shall step into the front rank of the Societies of the British Empire—at once an honour to the Science of our country and a valued servant to the State.

ANTHROPOLOGICAL REVIEWS AND MISCELLANEA.

Readers of the Journal are invited to communicate any new facts of especial interest which come under their notice. Short abstracts of, or extracts from, letters will be published at the discretion of the Editor. Letters should be marked "Miscellanea" and addressed to The Secretary, 3, Hanover Square, W.

Ethnology of Cornwall.

The following letter has been addressed to me by my distinguished friend Dr. Paul Topinard, who desires to publish it in the *Journal of the Institute.* It contains his impressions as to the prevailing physical types which he found in Cornwall, during a short visit which he made to that county last September. As he desires my comments I add them hereto.

Dr. Topinard sees little difference between the Cornish and other Englishmen, so far as physical type is concerned. This does not surprise me, though I do not quite agree with him. An English observer, like myself, accustomed to English types, naturally has his attention directed on visiting Cornwall, to those persons, be they many or few, who present *un-English* types, rather than to those, however numerous, who have a familiar aspect. The Cornish do not differ materially in kephalic index from other Englishmen; and no doubt the points of likeness are more numerous than those of divergence, and must necessarily strike a foreign anthropologist forcibly.

My own analysis of the Cornish population would be, I think, as follows:

1. The Neolithic race of Britain, which we have got into the habit of calling Iberian. In Cornwall, I think, there are traces of Phœnician or other Semitic admixture.
2. The British or bronze brachykephal, much more in evidence in Cornwall than, for example, in Wiltshire. I account for this by the recession of the military caste before the invading Saxons, such military caste having retained most of the original brachykephalic element.
3. The Saxon or other Teutonic invaders and settlers.

The physical type which most strikes my eye in Cornwall is the first-named, crossed by the second, and thus improved in stature and general vigour of aspect. The complexion is largely derived from the first.

The short, sturdy, round-faced type so prevalent in Devon, but less so in Cornwall, is always a puzzle to me. Is it merely a modification of the ordinary English "Batavian" type? What is its relation to Dr. Topinard's Pont l'Abbé type? Does it descend from the old Damnonians? Was it reinforced from Bretagne after the conquest? I cannot tell.

John Beddoe.

To Dr. John Beddoe.[1]

Dear Sir,

I must tell you the results of the trip which I made to the Land's End, Cornwall, after the Meeting of the British Association at Bristol. I visited particularly two of the villages which you pointed out to me, Newlyn and Mousehole, and also another, St. Ives.

My purpose, as you know, was to compare the anthropological types I should find with those, four in number, which I had previously ascertained in Bretagne, and described in a letter to Dr. Garson, published in the *Journal of the Anthropological Institute*, vol. xxviii, 1897, p. 99. Those four types of Bretagne were: 1st. A dark, short, good-looking type which is found principally in the centre of the peninsula, and which I consider as the descendant of one of the three races of the Neolithic period, the one which itself descends from the principal race of the Palæolithic period, both known in France under the name of the Mediterranean race, or, as you say in England, of the Iberian race. 2nd. A fair and tall type with blue eyes, blond hair, and a reddish complexion, which came during the 5th century principally, I do not say entirely, from the other side of the Channel. 3rd. A brachycephalous type with a big head, a rather flattened and unpleasant face, a short neck, square shoulders and trunk, etc., found, for example, among the Bigoudens of Pont l'Abbé, and descending from the brachycephalous race of the Neolithic period. 4th. A type of moderate stature with a long, quadrilateral, somewhat flattened and phænozygous face, a square and full forehead, square jaws and chin, etc.; this type being the most numerous, being found principally at the periphery of the country, and being the result of crossing between the 2nd and 3rd types mostly, if not entirely.

Well, in Cornwall I found nothing reminding me of the 1st and 4th types, but some characters of the 3rd type in a few individuals, and many people of the 2nd. My conclusion was that the population of Cornwall is now thoroughly English in type.

Nevertheless, I found that the average was less fair, less blue-eyed, less long-faced, less tall than in other parts of England. We cannot ascribe those differences to the British who were repulsed into Cornwall by the Anglo-Saxons, because we know not if there was any physical difference between those British and the Anglo-Saxons, the ones speaking a Kymric language and the others a Teutonic language. The probability is that the present type of Cornwall comes from the crossing of a fair people, either British or Anglo-Saxon, or more likely both, with an anterior dark population which was the Silures, who worked the tin mines of Land's End, as said by the writers of antiquity. If so, I ought to have found some vestiges of my 1st type of Bretagne, which was akin to the Silures. It is to be sought for by some other observer who can devote more time than I did.

Now, accepting the hypothesis that the British, and not the Anglo-Saxons, played their part in the formation of the present type of Cornwall, and comparing this with the most expanded present type of Bretagne, my 4th, one might say that the very great difference between the two finds its explanation in this: The British of Bretagne were crossed mostly with a brachycephalous population, and those of Cornwall with a dark and short population of Silures.

I submit these views to you: none have more authority to give them their proper weight.

I remain, yours most faithfully,

Paris, November 12th, 1898. Dr. Paul Topinard.

Confusion in Geographical Names.

At a meeting of the Berlin Anthropological Society held on the 16th July, 1898, Professor F. Von Luschan discussed the question of geographical nomenclature in European Colonial possessions, with especial reference to the South Seas. Patriotic enthusiasm has recently prompted explorers and administrators to associate the names of prominent countrymen, or of European provinces and towns, with islands, mountains and harbours in the Pacific Ocean. Such a procedure can only be justified where a recognized name, native or other, can not be shown to exist. Where the contrary is the case the rightful name is capriciously set aside to the complication of geographical and ethnological study, and to the confusion of the investigator. To re-christen as "New Pomerania" an island known for two hundred years as "New Britain" is to place an arbitrary difficulty in the way of the scientific enquirer and to remove one of the minor landmarks of history. This is but one example of a practice which increases year by year; and if it is to continue, the student will be ultimately compelled to treat the older books and maps as if they were written in cipher, and to consult them with the key in his hand. Nor will the inconvenience be confined to science alone, for it must inevitably react upon commercial enterprise.

Although Professor Von Luschan's remarks are principally concerned with German Territories, he rightly points out that his countrymen are not the only offenders. The re-christening mania flourishes in the British Empire, and Englishmen and Germans can condemn it with perfect impartiality, for where both are offenders the susceptibilities of neither need be wounded by a salutary reform.

In view of the wide-spread nature of the abuse, Professor Von Luschan is anxious that practical measures should be promptly taken to check its further growth. He suggests that the meeting of the Geographical Congress at Berlin in the course of the present summer would be a favourable occasion to bring the whole question forward. Meanwhile he proposes the following rules to indicate the main lines which reform ought to follow:—

1. Wherever possible the native name should be retained.
2. Where satisfactory native names cannot be found, those given by the first European discoverers should be retained.

As it is probable that Professor Von Luschan's views are shared by most geographers and ethnologists in these islands, it is to be hoped that they will receive the support of the British Delegates at the Congress.

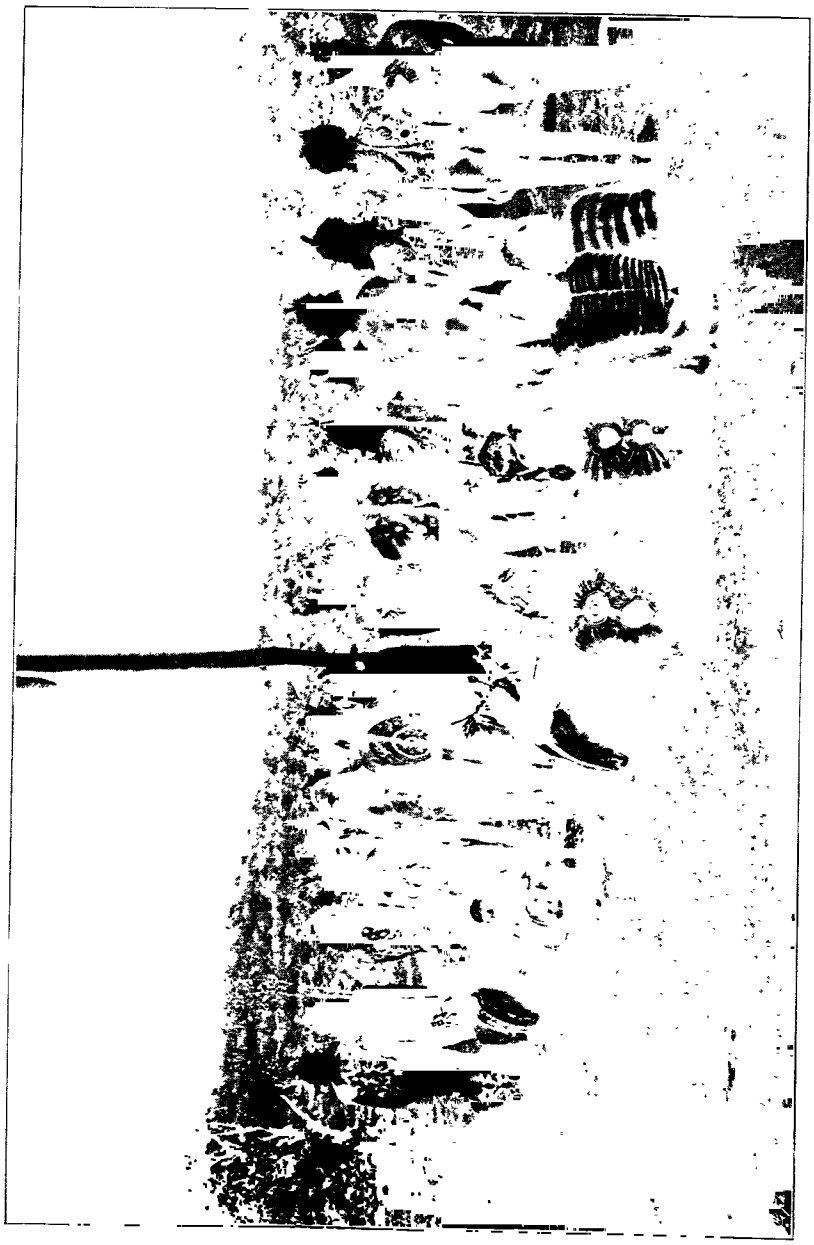
At the meeting of the Council of the Anthropological Institute on February 11th, 1899, the following Resolution in connection with this matter was passed:—

"The Council of the Anthropological Institute of Great Britain and Ireland endorses the recommendation of Professor Von Luschan with regard to geographical nomenclature in Colonial possessions and uncivilized countries as set out in his paper read before the Berlin Anthropological Society on 16th July, 1898, believing that such rules will not only be a great convenience to geographers and other scientific men, but will be of considerable practical value in commerce."

The Native Tribes of Central Australia. By Baldwin Spencer, M.A., and F. J. Gillen. London: Macmillan and Co., Limited, 1899.

[with plates xxv to xxvii.]

Several references to this work in the earlier pages of the *Journal* (pp. 280, 281, 322) bear testimony to its high scientific value. Professor Baldwin Spencer, the distinguished Professor of Biology in the University of Melbourne, has fortunately



TOTEMIC DESIGNS ON BACKS OF MEN UNDERGOING INITIATION.

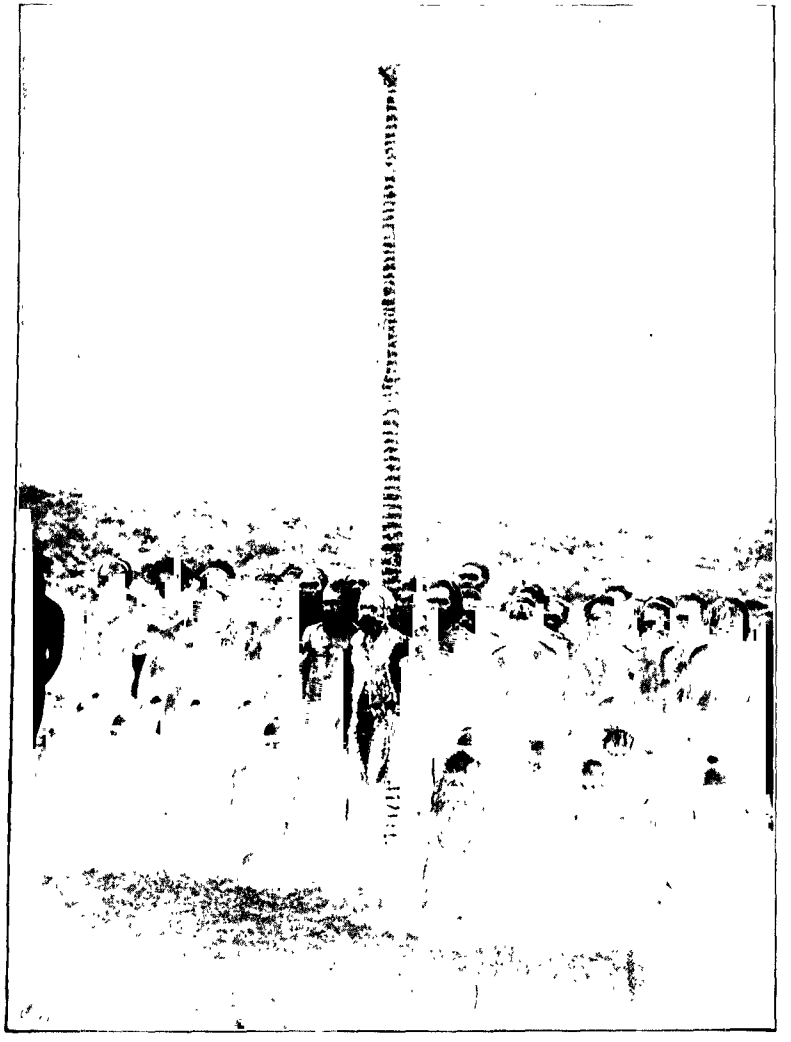


FIG. 1.—CEREMONY OF A KANGAROO TOTEM.



FIG. 2.—WOMAN THROWING CHARMED STICK.



FIG. 1.—AVENGER OF BLOOD CREEPING TO HIS FOE.



FIG. 2.—FIRE-MAKING BY FRICTION OF SPEAR-THROWER ON SHIELD.

associated himself in the preparation of the work with Mr. Gillen, the special magistrate and sub-protector of the Aborigines at Alice Springs. The tribes described by these able observers occupy a large area of steppe and desert land, difficult of access, in the very heart of Australia.

The authors describe the physical characters of the people, and devote a chapter to their clothing, weapons, implements and decorative art. But the special value of the work lies in the discussion of the social organisation and totemic system of the tribes, and in the detailed description of their ceremonies, especially those concerned with initiation. Both authors are fully initiated members of the Arunta tribe. During the summer of 1896–97, there was a great gathering of natives at Alice Springs for an important series of the ceremonies known as the *Engwura*, which occupied more than three months. These rites were witnessed by the authors, and are here described and illustrated with great fulness. The ceremonies connected with marriage and burial, and the various rites of magic also receive description; whilst the native folk-lore is by no means neglected.

Messrs. Spencer and Gillen's valuable work is copiously illustrated, largely from original photographs; and by the courtesy of the publishers, Messrs. Macmillan, a selection of the illustrations appears in Plates XXV to XXVII.

Explanation of Plates XXV to XXVII.

Plate XXV.

Group of Illpongwurra, or young men undergoing the Engwura ceremony of initiation. On their backs totemic designs have been painted with charcoal, red ochre, yellow ochre, white pipe-clay and grey wad, or oxide of manganese.

Plate XXVI.

Fig. 1.—Ceremony of the Kangaroo totem of Undiara, near the Finke River at Henbury. The pole, or *nurtunja*, here represented was made of 20 long spears lashed together, and reached a height of 18 feet. Fourteen *churinga* or sacred objects were attached to it. The spears in such poles are swathed in grass-stalks, bound with hair-string. The pole carries at the top a bunch of feathers, and is ornamented with transverse rings of birds' down, fastened on by means of congealed blood.

Fig. 2.—Illapurinja woman, or avenger of wrong, throwing a charmed stick at an enemy. The body of the woman is rubbed over with grease and red ochre, and decorated with white down fixed on with blood drawn from her husband. Her head is ornamented with rings and tufts of tail tips. In her left hand she carries a fighting club, decorated at the ends with down; whilst in her raised right hand is a large wooden churinga, specially made by her husband.

Plate XXVII.

Fig. 1.—Kurdaitcha man, or avenger of blood, creeping up to his foe. He wears shoes made of emu feathers, matted together with human blood, and tied to the feet with string of human hair. On his head is a small conical helmet formed of twigs and fastened on with hair string. Lines of down run across the front of the helmet, along the side of the face, and down the front of the body and legs as far as the knees. Between his teeth he holds a small sacred stone, or churinga. In his right hand is the spear with which he will attack his enemy, whilst his left hand holds a shield and a few wooden churinga.

Fig. 2.—Illustration of the method of fire-making by rubbing the edge of a spear-thrower backwards and forwards upon a shield of soft wood. The friction produces heat

enough to char the light wood and bring it to a state of glow, when careful blowing fans it into a flame. This is the process mostly employed for obtaining fire by the Arunta, Ilpirra and Luritcha tribes.

SPINIFEX AND SAND: A NARRATIVE OF FIVE YEARS' PIONEERING AND EXPLORATION IN WESTERN AUSTRALIA. By the Hon. David W. Carnegie. London: C. Arthur Pearson, Limited, 1898.

[WITH PLATE XXVIII.]

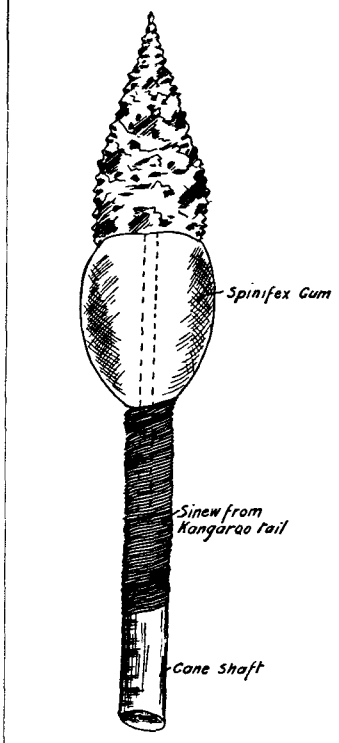
Though the vast tract of country known as West Australia contains much land on or near its coast either occupied by settlers or fit for occupation, a still larger area towards its eastern boundary is, and is likely to remain, desert. In other words, it consists of the "Spinifex and Sand," which form the title of Mr. Carnegie's extremely interesting book. Spinifex, the author remarks, has been called Porcupine Grass, *Triodia pungens*, and *Festuca irritans*. It grows "in round, isolated hummocks, one to three feet high; these hummocks are a dense mass of needle-like prickles, and from them grow tall blades of very coarse grass to a height of sometimes six feet." Camels and horses walking through it often suffer severely. And it forms a shelter for the kangaroo rat, which feeds upon its roots.

A sketch-map shows the routes taken by previous explorers. From it we learn that whereas earlier travellers crossed West Australia along lines having a generally east and west direction, Mr. Carnegie's course was nearly north and south, and lay almost entirely within the deserts. He remarks that the first aim of a party of Western Australian prospectors is to find not gold, but water. Last year we were told of a "water famine" in the east end of London, and learned that in certain districts there the inhabitants were reduced to some twenty gallons per head per diem. But in West Australia, where the prosperous town of Coolgardie now stands, there once stood an open forest dotted with the white tents and camps of diggers. With the thermometer at 100° in the shade, and amid clouds of dust, water was being sold at from a shilling to half-a-crown a gallon. Yet Coolgardie is many miles from the desert areas.

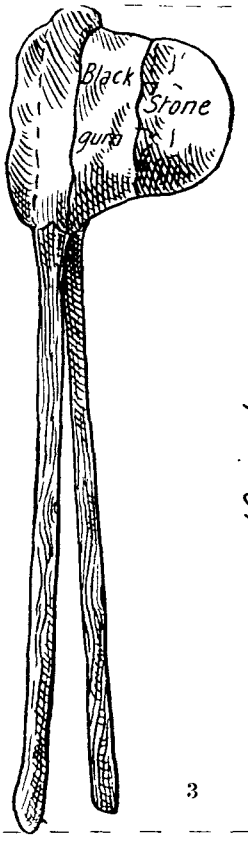
Within the desert, the chief, almost the only, anxiety of Mr. Carnegie and his party was to make sure of a supply of water sufficient to support existence in men and camels, allowing for the facts that camels can go many days without drinking and men without washing. But the supply obtainable from rock-holes or from digging in the sand was both extremely small in quantity and extremely bad in quality. On one occasion a native woman was caught, and she pointed out a rock-hole from which her party had got their water. The author adds (p. 232):—

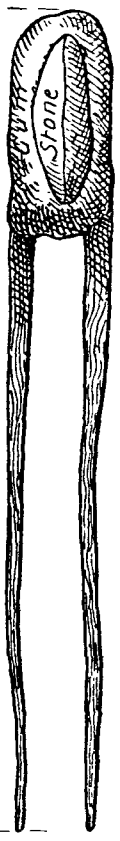
"The bottom of the hole was filled in with dead sticks, leaves, the rotting bodies of birds and lizards, bones of rats and dingoes. Into this ghastly mass of filth I sank up to my middle, and never shall I forget the awful odour that arose as my feet stirred up the mess. Nevertheless, water was there, and thankful I was to find it even to drink it as it was. After half-an-hour's work in this stinking pit, sick from the combination of smells—distinguishable above every other being the all-pervading perfume of aboriginals—I was rewarded by some twelve gallons of water, or more properly speaking, liquid."

Of course, in the desert the aboriginals are very few in number, and their parties very small. Individuals were captured whenever possible, in order that the explorers might have the advantage of their knowledge of local wells. They were then released. In the Kimberley district, on the north, they were more numerous. In the settled



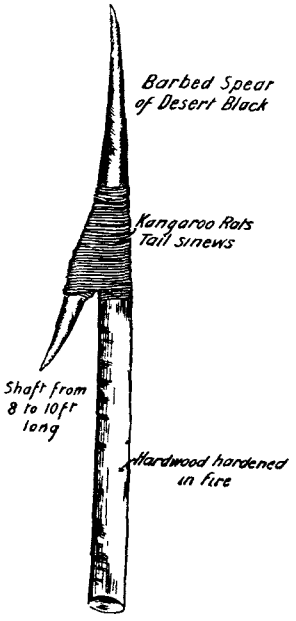
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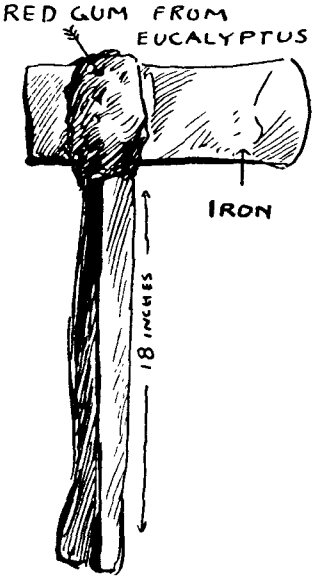


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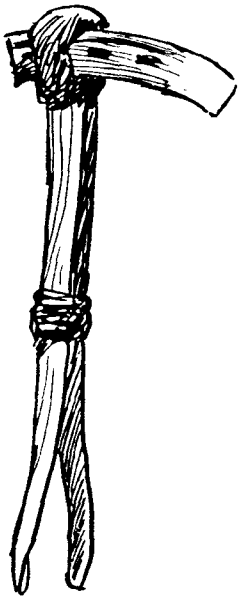
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IMPLEMENTS FROM WEST AUSTRALIA.

districts they like to loaf about near a squatter's station, living on the meat that is given them on killing days. Sometimes a smart boy is trained by a squatter or other white man, and becomes a useful servant about the station. Mr. Carnegie does not think that it would be of any use to set apart reserves for natives dispossessed of their hunting grounds by white settlers. For the natives "prefer to live a hand-to-mouth existence where food can be obtained without trouble, rather than retreat into another region were game abounds, and there continue their existence as wandering savages." He adds that round Hall's Creek, in the Kimberley district, there is always a camp of blacks, from twenty to one hundred in number, who live as best they can without hunting. They are a merry set of people there who often practise the "corroboree" or native dance, of which there is some account. A chapter is devoted to "some native weapons and ceremonial implements," figures of them being given. And the marriage laws of the aboriginals of Northern and Central Australia are briefly explained. The routes taken are illustrated by four maps, and by more than forty pictures of the persons, places, implements, etc., mentioned in the book. The publishers have obligingly lent blocks for the illustrations in Plate XXVIII. They represent a spear from the Kimberley district (Fig. 1); a barbed spear of the desert man (Fig. 2); a stone tomahawk from Sturt Creek (Fig. 3); and two iron tomahawks (Figs. 4 and 5).

Few explorations, if any, have ever been successfully carried out in which the difficulties were greater and more persistent, and in which success was more largely due to the cheerful fortitude with which the leader of the expedition inspired his followers, and to his kindly care for the welfare of every man and animal under his charge. T. V. H.

West African Studies. By Mary H. Kingsley. Macmillan Co. 1899. Demy 8vo. pp. xxiv, 639. Maps and photographic illustrations. Price, 21*s.* net.

In these *Studies* Miss Kingsley has treated, more fully than was possible in her *Travels in West Africa*, a number of questions which are raised by the native populations and cultures of the West African coasts, and by the dealings of Europeans with them.

The first few chapters are of the nature of introductory scene-painting, presented in the graphic and unconventional language which distinguishes all Miss Kingsley's work; and largely consist, as the authoress confesses, of materials "crowded out" of her former book.

Of all the misconceptions on which popular knowledge of Africa is based, none perhaps is so inveterate as the use of the term "Negro" indifferently for the true Negro of West Africa, and for other black peoples of Africa, particularly for those which are wholly or mainly Bantu. Thanks partly to this confusion, partly to the physical difficulties so vividly depicted in these *Studies*, our knowledge of this stock has been mainly derived, until quite recently, from the accounts of earlier travellers who were saved from this particular error simply because their knowledge was limited to the West Coast. The great monographs of the late Sir Alfred Ellis on the Yoruba-speaking, Tshi-speaking, and Ewe-speaking groups, and a few other studies of particular peoples, have thrown, of course, much new light recently on many of the questions at issue; but these *Studies* themselves show only too clearly the great blanks in our knowledge.

The term "Fetish," like the term "Negro," has come to be used in an ambiguous sense, either for primitive religion in general, or for the cult of spirits embodied in

material objects: and Miss Kingsley has some cause for her protest,—though we fear that it comes too late,—against a source of confusion which will only increase as the true West African Fetish becomes more familiar. Previous writers, with imperfect knowledge of the complex ethnology of West Africa, have been too much inclined to group all data of West African religion together irrespective of place, and to generalise from all alike. Miss Kingsley distinguishes four principal schools of Fetish, and indicates the local circumstances and external influences under which they may severally have risen.

The chapter on the Law of Property in West Africa expands a paper read at the meeting of the British Association last year, and is peculiarly opportune in view of recent fiscal difficulties. We regret that Miss Kingsley's recent paper "On the Connection between Religion and Law in West Africa" has not been reprinted, like the chapter on Fishes, which also appeared in the *National Review*; and we may perhaps be permitted to hope that its reappearance is only delayed until a further instalment, on Criminal Law, which is promised in the preface to the *Studies*, is sufficiently advanced for publication.

The latter part of the book is mainly occupied with a detailed arraignment of the Crown Colony System and all its works, which it would be beyond our province to enter into here.

Miss Kingsley has been well advised in her reliance upon what must remain the first source of information about any distant country,—namely the experience of the European traders. Her account of early trade with West Africa presents the history of European, and particularly of French trade in a clear, if somewhat partial, fashion. And one of her principal services to ethnology will, we think, be found to have been that she has stated vigorously the claim of the trader to be consulted in West African questions, whether theoretical or practical. Business ability is not always associated with the gift of literary description, and it has usually been the fate of the men who really know one Negro from another, and the custom of one creek from that of the next, to carry their knowledge with them unpublished to the grave. It is therefore to be hoped that the example set by the publication of the two papers, by experienced traders, which are appended to these *Studies*, may be speedily followed by other West African specialists. J. L. M.

THE PRE- AND PROTO-HISTORIC FINNS, BOTH EASTERN AND WESTERN, WITH THE MAGIC SONGS OF THE WEST FINNS. By the Hon. John Abercromby. 2 Vols. London: David Nutt, 1898.

In this monograph Mr. Abercromby has made a valuable contribution to the study of anthropology and folk-lore. We have here an interesting summary of the ethnology and folk-beliefs of a race of which English students know little. We generally restrict the name Finn to the natives of Finland and Esthonia, but Mr. Abercromby includes in his survey the allied nationalities of the Mordvins, Ceremis, Votiaks, Permians, and Zirians.

The first volume is in the manner of an introduction to the collection of songs, incantations, and magical formulæ to which the second is devoted. The result of his elaborate survey of the physical characteristics of these races appears to show that while the Finns are brachycephalous, the Ceremis, Esthonians and Livs are mesocephalous. The race, then, as a whole is not homogeneous: rather at some early period two different stocks came in collision and amalgamated. To the question to

which race belonged originally the languages now known as Finnish and Ugrian, in other words—Did the short-headed men impose their tongue on the long-headed men, or *vice versâ* ?—no distinct answer can be given; but Mr. Abercromby suggests that it is possible to believe that "the original congeries of human beings from which by hypothesis sprang the united Finno-Ugrians or the united Finns alone, was not composed of a homogeneous cranial type."

We have then the social development of the race traced from the neolithic period down to historical times. It is quite impossible to summarise the great mass of valuable anthropological and folk-lore information which has thus been collected and arranged. We may specially refer to the account of the tribal gods, the system of exogamy, the mutual aversion between the relatives of husband and wife, the influence of naming and the pantheon of the powers of Nature to which their worship is directed. To the student of folk-lore the second volume will be of unusual interest, supplying, as it does, a number of curious spells and incantations much in the style of the old Hindu Atharva Veda. We have spells to induce and remove all manner of disease, to aid the work of the hunter, farmer and housewife, and a large collection of quaint traditional accounts which explain the origin of fire, the metals, and so on. Throughout we find important analogies to the more important cycles of mythology and folk-lore. Mr. Abercromby deserves the gratitude of all students of the subject for his laborious collation and arrangement of a great mass of scattered information on the culture and beliefs of a people whom recent events have made specially interesting to us.

W. Crooke.

Among the Himalayas. By Major L. A. Waddell. Westminster: Archibald Constable, 1899.

This book, which may be regarded as a supplement to Major Waddell's valuable account of the Buddhism of Tibet, contains a lively record of a series of excursions made by him in a region of which we have little definite information. It is not a systematic treatise on the geography or ethnology of the great range forming the northern boundary of our Indian Empire, but it is brightly written, and incidentally records many interesting notices of the customs and beliefs held by a very primitive people. Thus, we have a fairly complete account of the Lepchas: among them if the lady take a basket of eggs from her lover it is equivalent to the acceptance of a proposal of marriage: they show obvious traces of the matriarchate, have usually only one wife, and there is no ceremonial marriage. They had no true conception of private property until they learned the idea from contact with Bengal traders. The husband who wishes to divorce his wife pays her a small sum of money, varying according to the length of time they have been married: the wife, if she desire a separation, gives a fixed sum of money and one suit of clothes. He discusses the question of polyandry at some length. It is of the fraternal type, and is partly an arrangement to protect the joint family while the head is away for weeks herding the cattle, and partly a device to keep the common property within the family in a country which cannot support a large population. If the eldest brother marries, his wife is common to him and all the younger brothers: if the second marries, it is only those junior to him who share her favours. But the case of the present queen of Sikkhim is an exception to the rule: she was originally married to the younger half-brother of the present king, now she is joint wife of both. Polyandry, of course, gives rise to a puzzling variety of relationships: usually the children call the eldest of the conjoint brothers "father."

Among other records of custom we may note that of the blood sacrifice in oath taking, two bull yaks are slain, and the parties to the oath dip their hands in the blood: the Tibetan form of salutation is to press forward the right ear and put out the tongue: when a Nepalese returns from a foreign land he is obliged to drink water with an official as a sort of reinitiation into caste: in one case the skulls of some girls who perished from starvation were made into drums for summoning the devils. The Lama, we are told, has curly hair, which is remarkable in view of the popular representation of the Buddha, which does not agree with any definite Indian type.

Among folk-lore references we have the case of the Mount Tendong, which miraculously elongated itself to save the people from the great flood: hot springs are the abode of devils which cause disease if they are not conciliated: the common marmot if ill-treated brings storms: frogs are worshipped to cause rain: a holy white bull yak appears and brings prosperity to a valley: the Spectre of the Brocken is an omen of good luck, but the beholder must mutter prayers and spells: the lake spirit appears as a furious bull yak or as an alluring siren.

We trust that this book is the forerunner of a larger monograph on the geography and ethnology of a most interesting region.

W. Crooke.

Hindu Manners, Customs and Ceremonies. By the Abbé J. A. Dubois. Translated and edited by H. K. Beauchamp. 2nd Edition. Oxford: Clarendon Press, 1899.

The account of the manners and customs of the Hindus of Southern India by the Abbé Dubois has long been recognised as one of the classical authorities on the religions of India. It was first published under the auspices of the East India Company in 1817, and has been more than once reprinted in later years. Unfortunately the standard edition did not include the last additions and corrections made by the revered author. The original MS. has now been discovered at Madras and has been re-translated and edited with excellent taste and an adequate display of learning by Mr. Beauchamp. The Abbé's work represents, of course, the earlier stage of inquiry into Hinduism, coeval with the writings of Sir W. Jones and the establishment of the Asiatic Society of Bengal. At that time little was known of the original Sanskrit authorities, and the Abbé's inquiries were confined to Southern India, where Hinduism is largely impregnated with Dravidian beliefs, and appears in a very different form from the version of the faith as expounded by the Pandits of Mathura and Benares. But the writer, who lived for many years as a native among the natives, was in a peculiarly favourable position for acquiring a knowledge of their beliefs and practices, and if, as a missionary, he took a more gloomy view of Hinduism than that of later and less prejudiced scholars, this is only what might have been expected. With these obvious limitations the book is valuable and interesting. In many ways it resembles Ward's account of the Hindus of Bengal, and both are useful as descriptions by practical observers of the institutions of Hinduism before it came under the influence of Christianity. Mr. Beauchamp might have done more in referring to the later literature of the subject as contained in the Sacred Books of the East and modern studies of popular Hinduism: but his notes are useful as correcting many of the Abbé's misconceptions. We trust that the Clarendon Press will continue their useful task of rendering the classical accounts of Hinduism more accessible to modern students.

W. Crooke.

L'Abrégé des Merveilles traduit de l'Arabe d'après les Manuscrits de la Bibliothèque Nationale de Paris. Par le Baron Carra de Vaux. (*Actes de la Société Philologique, Organe de l'Œuvre de Saint Jérome, Tome xxvi.*) Paris, C. Klincksieck, 1898.

The *Book of the Thousand Nights and a Night*, though the most famous of the collections of romances formed under the influence of Arab culture, was by no means the first. Arab literature must have tried its wings, and made many an effort, before it could arrive at flights lofty and sustained as that. The first effect of Mohammedan enthusiasm was undoubtedly, as might have been expected, a repression of all imaginative literature, and indeed of all literature not distinctly religious. In this respect the traditional answer of the Khalif Omar to Amrou's enquiry, what was to be done with the Alexandrian library, though apocryphal, represents accurately enough the fanatical spirit of the conquerors. But the influence of the civilisations they had overcome and partly destroyed could not be evaded. Egypt, especially, must have given a powerful impetus to a disposition greedy of wonders, to which the Koran itself bears abundant witness. And speedily the extravagances we think of as most characteristic of Oriental imagination developed. At first they would take a religious and historical guise; they would be written not for the amusement but for the belief of the faithful. The work of emancipation must have been gradual, and dependent upon a variety of causes; and a considerable period must have elapsed before the tales told nightly for pastime in the tent were solemnly committed to writing.

The book translated by the Baron Carra de Vaux belongs to an early, but not the earliest, period of this evolution. There are several manuscripts of it in the Bibliothèque Nationale at Paris, the oldest of which, a small and rather dirty, but closely and elegantly written work, dated A.H. 882 (which began on the 15th April, 1477, A.D.), forms the basis of the text adopted by the translator. Its defects, and notably two important *lacunæ*, have been supplied from other manuscripts of varying values. The author is unknown. One at least of the manuscripts attributes it to the famous Mas'oudi, who lived in the fourth century of the Hegira; while Makrîzi, citing portions of it, ascribes some to an author of the seventh century A.H., and others to Mas'oudi. The translator practically rejects both ascriptions, the former on the ground of date and the latter of style, contenting himself with the conclusion that all the legends are old, and that the book may well represent the state of folklore in the Mussulman world in the tenth century of our era.[1]

Beginning with the Creation, the author, whoever he may have been, gives an account of that interesting event, repeatedly citing the Koran, but not disdaining other equally authentic sources of information, such as tradition, the wise ancients, the speculations of philosophers, etc. He then describes the nations created before Adam (the djinns), and passes on to the description of the world as it is and the various tribes of men. These chapters are full of marvels, not unmixed with fragments of real knowledge, and probably represent fairly the state of Arab geography and ethnography of the period. The history of Adam and his descendants is next traced, winding up with stories of Arab diviners and seers, in connection with the last of whom (a lady), it is interesting to note, the incident of Birnam wood is

[1] There is a note of time on p. 120, where the Lombards are represented as ruling a vast kingdom between the Franks and the Romans (the Greek Empire). If we could depend on it, it would place the composition of the book prior to the reduction of the Lombard kingdom by Charles the Great in 774.

related. The second part is devoted to the marvels of Egypt; in effect, a "history" of that country corresponding in character to Geoffrey of Monmouth's famous chronicle of our own island.

Among the innumerable marvels recited here concerning the works of Egyptian art, many of those well known in mediæval Europe and attributed to Vergil the Magician are prominent. The magical mirror, wherein things distant may be seen, is repeated again and again. The statues which guard the kingdom, or watch over buried treasure, are also frequently met with. If the translator be right in fixing the date of the collection in the tenth century, written evidence of these beliefs in magical works of art is found in the East two hundred years before it appears in European literature. The question is thus raised whether some at least of the traditions fastened on the great name of Vergil may not have been imported from the Arabs. This is a possibility which neither Signor Comparetti nor Professor Tunison has fully reckoned with. While, however, the question is worth consideration, it must never be forgotten that priority of writing does not of necessity mean priority of telling.

To notice other marvels which appear in the course of this curious "history" of Egypt, as it was received by the Arabs of the early centuries of Mohammedanism, would exceed my space. It must suffice to have drawn the attention of the members of the Institute to a book of such importance to all who are interested in Oriental fictions, and in the problems of the growth and transmission of human ideas. Nor is it merely of value for these matters. It presents a picture of Arab science at the period when it was written, and thus forms a document necessary for the study of Arab civilisation, and instructive to compare with the contemporary writings of the West.

E. Sidney Hartland.

Vocabularies from Kavirondo, British East Africa. Collected by Mr. C. W. Hobley, F.R.G.S.

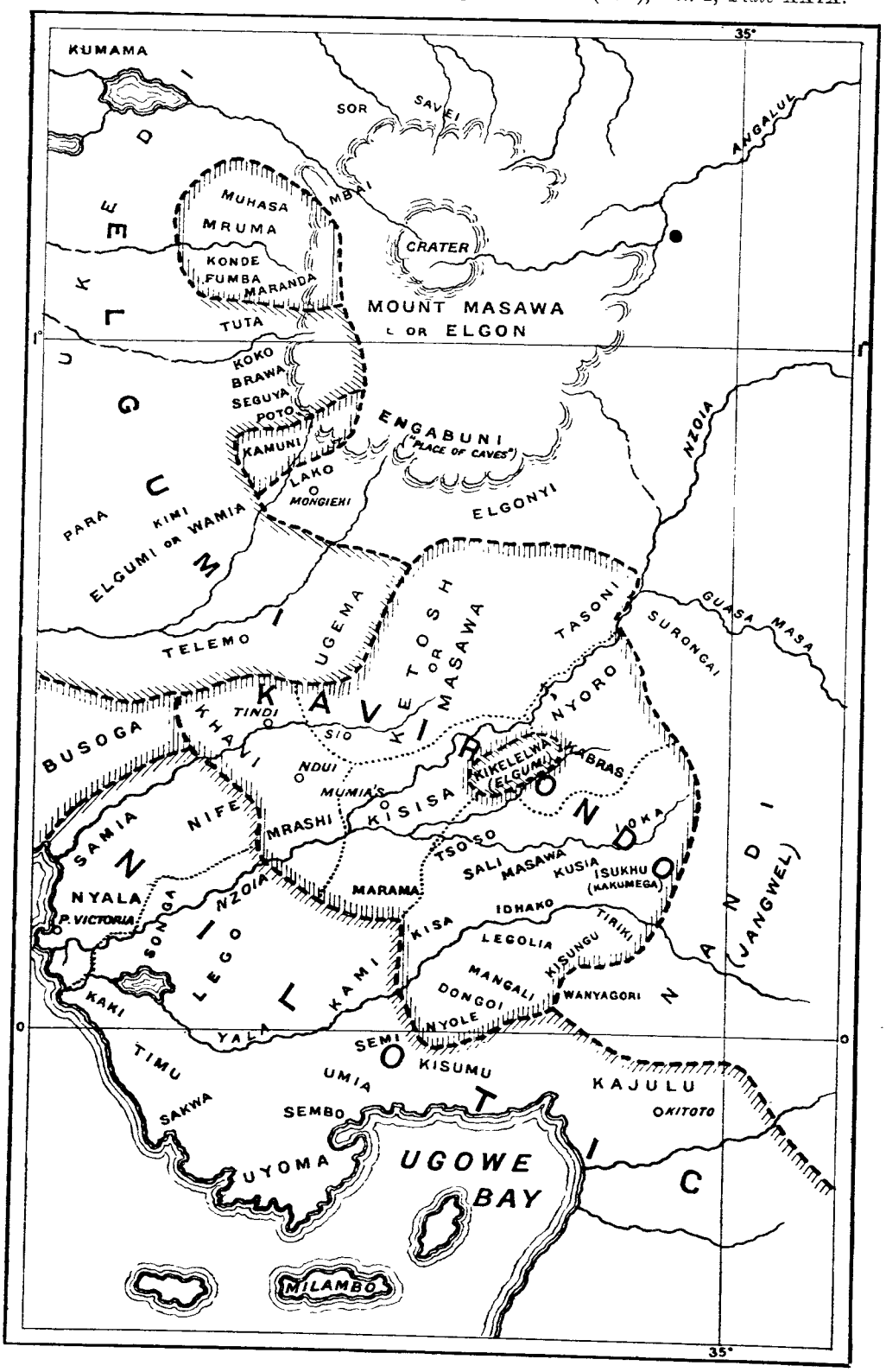
(Communicated by Mr. E. G. Ravenstein, F.R.G.S.)

[with plate xxix.]

Kavirondo, from an ethnographical point of view, is one of the most interesting districts of British East Africa, for within it meet the boundaries of three great linguistic divisions of that continent, the centre of the country being occupied by Bantu, the lake-shore by near kinsmen of the Shuli and Shiluk of the upper Nile, and the wide steppes in the north and east by pastoral tribes whose languages suggest a Hamitic origin. Since Mr. Joseph Thomson's visit in 1883, Kavirondo has been frequented by numerous European travellers, and among these Mr. Hobley has had the best opportunity for acquiring a full knowledge of the country and of its inhabitants. During a residence of three years, as administrator of the district, he traversed the country in all directions, vastly improved existing maps,[1] and collected valuable information on the languages spoken.

The six vocabularies compiled by him number about a hundred words each. He took great care to eliminate errors due to the ignorance or carelessness of the interpreters. In the case of the Lako, Nandi, and Muhasa languages, the words had first to be translated into Masai and then into Swahili, before the English meaning was reached, and only in those cases where an article could be pointed

[1] See his papers with maps, in the *Geographical Journal*, ix, 1897, and xii, 1898.



MAP OF KAVIRONDO AND NEIGHBOURING COUNTRY, BRITISH EAST AFRICA.

at the word was obtained direct. Mr. Hobley has not collected sentences or grammatical notes, but as he is again at his post he will no doubt endeavour to secure fuller information than he obtained during his first period of residence.

On the accompanying sketch-map (Plate XXIX) the names of all the tribes mentioned and grouped linguistically by Mr. Hobley, and no others, have been inserted.

This map shows that the Kavirondo occupy the centre of the district, as well as two detached territories to the north, one of which is held by the Kamuni, who are closely related to the Ketosh, whilst the more distant one is in the possession of the Muhasa and of several minor tribes closely related to them. The vocabulary of the Kavirondo language was obtained at Mumia's boma. The language of Muhasa seems to differ from it only dialectically. There can be no doubt at all that both these languages belong to the Bantu family.

We can speak quite as confidently as regards the relationship between the languages spoken by the shore-tribes, as represented by Nife, and the languages spoken on the upper Nile. Mr. Hobley had an opportunity of obtaining a Shuli vocabulary from a Sudanese soldier, and found that Nife was very much like Shuli. This conclusion is fully borne out by a comparison with the vocabularies of Shuli, Lur, Shiluk, Jur, etc., published by Dr. Emin in the *Zeitschrift für Ethnologie* (1882). The "Kavirondo" of the Rev. M. Wakefield[1] belongs to the same Nilotic family for the coast-tribes apply the term Kavirondo to the country, without reference to the languages spoken by the tribes who inhabit it. This use of the word seems to explain, too, Dr. Fischer's statement that the Wanga at Mumia's town, the Nyoro and the Wifu (Hobley's Marama) do *not* speak Kavirondo, but some other language.[2]

The *Elgumi* occupy a vast territory extending from the shore of Lake Rudolf as far as the territory to the east of the upper Nile occupied by the Latuka and the Lango.[3] The Elgumi country is known as Turkana. The vocabulary now published was obtained in a district to the south-west of Mount-Elgon, called Imanikoko or Ekariwok.

The *Kikelelwa*, who occupy a detached district in the centre of Kavirondo are also Elgumi, who migrated from Ugema some fifty years ago. Mr. Hobley is inclined to enrol the Elgumi in the Nilotic family, although apart from a few numerals and one or two other words, which are the same as in Masai and Shuli, there seems to be no ground for such an assumption.

The *Nandi* (or Jangwel) and their kinsmen the *Lako*, on the other hand, are stated to resemble the Hamitic Somal, and to have the pastoral instincts which appear to be characteristic of many of the Hamitic tribes. Höhnel,[4] however, places Masai, Elgumi, Nandi, and Suk in the same group, and Professor Leo Reinisch, from a small vocabulary of the Suk language, judges all these tribes, and at all

[1] *Vocabulary of the Kavirondo Language*, London (S.P.C.K.), 1887.

[2] See Petermann's *Mitteilungen*, 1895, pp. 46, 66. Dr. Fischer says that the Nyoro are called Wakami by the Kavirondo and Tiriko by the coast traders. Mr. Hobley has three distinct tribes or districts :—Nyoro, Kami and Tirikè ; he calls Fischer's Wanga, Kisesa. It is much to be regretted that a full account of Dr. Fischer's visit to Kavirondo in 1886 has never been published.

[3] Dr. Emin published a vocabulary of Latuka which shows them to be Masai or Wakuavi as pointed out by me in 1884 in the *Proc. Roy. Geog. Soc.* The Lango appear to be their kinsmen, although some of them appear to be bilingual, speaking also Shuli.

[4] Petermann's *Mitteilungen, Ergänzungsheft* No. 99, pp. 33–35.

events the Suk, to belong to the Nilotic family. Vocabularies, however, are hardly sufficient to settle this point. It is nevertheless deserving notice that the word for ten—tomon—is the same in the languages spoken by the Beja, the Shoho, the Arbore Galla, the Dawro and other tribes in southern Abyssinia, the Masai, the Elgumi and the Nandi. E. G. R.

English.	Kavirondo, Kisisa Dialect.	Muhasa.	Nife.	Elgume.	Nandi.	Lako.
Sun	eriuba	....	wankchien	akelon	asista	asista.
Moon	umwezi	....	tue	elap	arawet	arawet.
Fire	malilo	muriro	machi	akim	māt	mata.
Rain	nifula	....	kaoti	akiru	robta	ropda.
Water	amazi	medzi	pi	agipi	bēk	pigor.
Man	mundu	gutimutu	tzano	etunga	ayondit	chito.
Women	mkossi	mkasi	tzako	aberu	korusick	koroket.
Father	baba	....	woru	papakan	baba	baba.
Mother	mama	....	mama	totokan	yeyonyo	mama.
Child	....	....	....	ekoko	—	—
Male child	....	....	....	ekilokiti	—	—
Female child	....	....	....	apesi	—	—
Head	omurui	mutwi	wie	aku	metit	metit.
Nose	molu	muru	....	....	....	seroot.
Eye	imoni	t z i m o n i (plur.)	wanga	akongo	konde	—
Ear	okurui (plur. marui)	ikutu	itza	akiti	idīt	idīt.
Tongue	ololulimi	lulimu	lep	angajeb	guelebda	mesit.
Teeth	ameno	gameno zaria	lāk	ekela	kelek	kendit.
Hair	diswi	liswui	wichi	etim	sumek	sabwiek.
Leg	inguo	vigendero	tienda	akejen	nguriet	kenda.
Arm	mukono	mukono	kingi	akan	ewoot	ewoot.
Finger	olualа	jiriyara	lueto	ibokori	morīt	morit.
Finger nails	ditera	viteta	kugono	abelikek	siet	pundet.
House	inzu	inyumba	oti	etogo	koet	kuto.
Salutation	murembi muno	yoko yoko mana, or gwena	amosia	mata	m u r e n n i sovai	sovai misiri.
Spear	lifumo	lifumo	tong	akwara	wotet	uwotet.
Bow	uhingo	uhingo	atunu	akawa	kweanda	kweanda.
Arrows	miwano	miwano	atsero	ekoyo	kortick	kortiet.
Shield	ngao	ngabo	....	ebuku	....	longet.
Club (knobstick)	....	....	....	ebiro	—	—
Gun	....	....	....	ekipiai	—	—
Hoe	mbagu	....	kweri	emeleku	magombet	magonget.
Knife	....	....	pala	ekileng	—	—
Cooking pot	inyungu	chinaga	akulu	amuti	teret	teret.
Stool	..	....	....	ekicholon	—	—
Tobacco-pipe	....	....	....	amutike taba	—	—
Cloth	inanga	(no word)	lao	emukuli	ongoriet	anget.
Beads	ishuwa	(no word)	utiti	atipe	sonoei	sonandet.
Cowries	zisimbi (sing. isimbi)	zisimbi	gaki	esegira	segeri	segeri.
Iron	eshivia	chivia	utiti (*sic*)	aswat	soniek	burutik.
Iron wire	olinalu	....	amina	(no special word)	magariat	segengeit.
Brass wire	mkasa	....	mula	aisinet	taiet	tiet.
Earth	diroba	idoi	lo	alu	nguyek	mwenyut.
Stone	nigiwi	liwari	kiti	amuru	geita	ruandit.

English.	Kavirondo, Kisisa Dialect.	Muhasa.	Nife.	Elgume.	Nandi.	Lako.
River	mwalo	....	nam	angwalol	ainet	inet.
Lake	liala	....	iyea	atabara	silgoi	kurimbet, tambabolyet.
Hill	ishikulu	....	atsutso	emuru	legurnet	tulwet.
Cattle	ningombe	inasu, nti	tsiangi	akiteng	teta	toga.
Buffalo	imbogo	....	jo	kasowan	sayet	sayet.
Sheep	likonde	mahesi	rombo Lur	umerikek	echiriet	kechir.
Goat	imbuzi, eshaill	imbwi, chingavu	dieli	ekine	gnoriet	warek.
Dog	....	....	....	ekingok	—	—
Bird	....	....	....	egwenyi	—	—
Fowl	ingok	nguku	kweno	akokor	ngoket	ngoket.
Eggs	mabuyu	rigi	tongweni	abei	kaiwaiek	megeik.
Milk	maweri	....	chak	akile	chego	chego.
Meat	ninyama	....	ringho	akeri	pendo	pindjo.
Hide	lisero	riafu	pien	ejamu	mwita	mwitu.
Elephant	ninsolu	....	liechi	etome Latuk	eliot	maiet.
Ivory	ulwika (plur. zinzika)	ipoko	lāk	ekela	kelek	kendet.
Rhinoceros	....	....	njiri	anusing	kebawet	kibawet.
Lion	linani	....	ogwangi	angatunyi	myetunda	ningatingjo.
Giraffe	....	....	amuga	ekuri	kenchuyet	kaiyiandet.
Tree	msala	gutigusara	yen	akitoi	ketit	taranyet.
Grass	obonyassi	unyassi	lumu	anya	suswek	susek.
Millet (mtama)	maveri	....	bel	mumwa	musongeik	jego.
Maize (mohindi)	matumwa	....	otuma	ekurididi	(not known)	setet.
Banana	maremwa	itidoti	labolo	alaboro	watotiat	ndotet.
Native beer	malua	....	kongo	ajwen	maiek	piniondet.
Tobacco	ndaba	itaba	ndawa	taba	tumotet	tumotet.
Firewood	elogui	tchiku	yieni	aketo	kwenek	kwenela.
To-day	lero	....	tenendi	aparan	rakhui	rankut.
To-morrow	msuri	....	kinyi	emui	mutai, tuni	mutai.
Good	ndai	....	wachango	akajukan	karara	karanan.
Bad	imbi	....	rachi	erono	lya	miat.
Big	nkali	....	etuon	loka polon	nuo	korigit.
Small	mtutu	....	matin	matit	niminim	kisicho.
Black	imari	....	rateng	lokirionon	tui	tosh.
Red	malasiri	....	suluwali	lokaringan	libiri	ara.
White	ndafu	....	rachari	lokakwangan	leil	siriwesh.
Buy	kula-kula	....	nieo	agwela	alisiet	gagwan.
Sell	kula	....	azinieo	kiseja	kioni	guzit.
Sit	ikhala	....	petipin	akibui	tibingwan	tubangwen.
Stand	singira	....	etchun	akiwo	ketonon	janyo.
Go	tsia	gutzi	tzi	alosito	ngebe	ngebe.
Carry	chinga	....	tingi	akiwoke	kakaikasem	kisana.
Give	mbe	tupeni	mia	aso	koitoi	koni.
Say	semaza ?	....	....	....	....	sunget.
Build	iyumbakha	....	kerooti	agiduk	ketegort	kakitei.
Want	makoka	mbebe	atwaro	akikoto	kelekono	amachakio.
Cultivate	ku-rima	....	etziburu	akuru	kibat	webaba.
Fight	khupe	....	jogore	arem	kibarike	kibaragei.
Hunt	ku-ima	....	duara	amej	kibendi	jangewenda.
Cut	akhlaka	....	gnolo	agitub	kidilit ilogōt	kenawewa.
Kill	ira	....	etchuo	akiara	kakiba	pusio.
Sleep	kona	....	nendo	aperu	eruyo	moru.
Die	fua	....	etso	atwanare	komet, kamikito	kame.
1	ndala	chonyeri	achiel	apuru	agengi	agengi.
2	ziwili	viwiri	ario	are	aien	aien.

English.	Kavirondo, Kisisa Dialect.	Muhasa.	Nife.	Elgume.	Nandi.	Lako.
3	zi-taru ...	bitatu ...	adek ...	auni	somo	soruok.
4	zi-nne ...	vinne ...	anghwen	aungwen	angwan	angwan.
5	tzaranu ...	bitano ...	abichi ...	akanyi ...	moot	moot.
6	tzi-saraba	bisesaba ...	ouchiel ...	akanya kape	ilo	ilo.
7	msaf.... ...	vinne na vitatu	abichi kario	akanya kare	tisab	tisab.
8	munane	chinane	abichi kadek	akanya kauné	sisit	sisit.
9	tzaranu-nne	vinne na vitano	abichi kangh-wen	akanya kang-wun	sokhol	sokol.
10	ekumi ...	vikumi ...	apare	atomon	taman	taman.

Explanation of Plate XXIX.

Sketch-map showing position of all the tribes mentioned by Mr. Hobley in the preceding paper on vocabularies from Kavirondo.

A Weekly Miracle.

Under the above heading an article appears in the *Cornhill Magazine* for March, 1899, giving an account of one of the ordinary weekly services of one of the more extravagant sects of Mahommedanism, the Isawíyah. The writer, Mr. Roger E. Fry, remarks that:—

"The sect of the Isawíyah is hereditary . . . The sect originated in the early days of Mahommedanism among certain holy men who acquired immunity from the stings of poisonous reptiles; but it takes its name from a later saint, Sidi ben Isa, who gave the sect its present constitution and its sacred writings, and immensely extended the powers of immunity possessed by its members, discovering how to swallow broken glass, nails, prickly pears, leaves and other apparently deadly things." He adds that the sect is found throughout Tunis and Algiers, and that "they are neither more nor less pious, and they pursue the same callings as their less gifted neighbours; but on any great occasion, such as the Bey's birthday, when a particularly auspicious influence is desired, the Isawíyah assemble and go through their terrible self-immolations."

Mr. Fry was present at an ordinary weekly service at a place about forty miles from Tunis. The music and dancing of which it consisted became gradually faster and more violent, till, the dancers being in a state of frenzy, one of their number came forward and approached a man who acted as a kind of steward, and held in one hand a large cloth filled with pieces of broken glass. Even then he drew back at first.

"At last, when the eager gesture of his outstretched neck made it clear that no vestige of reluctance remained, the steward clapped the glass into his mouth and held his hand over it for a second. The devotee rushed back, as it were, for consolation to the first steward and held him in a tight embrace. For some time he remained so, making strange incoherent gestures with his arms, while the steward, gradually lifting up his head, proceeded to massage his face and throat; when his head was raised the man was still chewing and swallowing the horrible mouthful. After he had recovered himself somewhat his turban was wound round his head and he was lifted and shoved back into the line of dancers."

Then glass eating became general. We are told that some of the Isawíyah never attain to the power of eating glass, while others have it almost from birth. After the glass had been devoured, the next course consisted of carpenter's nails "at least three inches long," which was succeeded by another of prickly pears. Granting that the glass was actually swallowed, it would be difficult to over-estimate the number of bites which each morsel would require before it could be safely consigned even to the *dura ilia messorum*.

T. V. H.

Englishmen and Romans.

Professor Sergi has just published in the *Nuova Antologia*, a very interesting paper, entitled "Inglesi e Romani." Therein he justifies his adhesion to the opinion that of all modern nations the English most nearly reproduce the moral type of the conquering, colonizing, organizing Roman. And he proceeds partially to account for this similitude, by pointing out that the Romans were in the main southern or Mediterranean dolichokephali, and that the British are in the main northern dolichokephali; and that these are after all at bottom one race, though divided ages ago by the intrusion of the eastern or Alpine brachykephali, whom he considers to be the true Aryans. J. B.

Fishing with Kites.

In one of his recent despatches from New Guinea Sir William MacGregor gives an interesting account of the very original method the natives of Dobu employ for catching fish by means of flying a kite. The kite is gracefully and cunningly constructed of four leaves, each about a foot long and 3 to 4 inches broad. To the kite are attached two strings, one of which is usually about a quarter of a mile long, though for fishing from the beach it may be much shorter. The fisherman holds the end of this string, and by it he regulates the position of the kite. The other string attached to the kite is long enough to reach the water, and may be from 100 to 300 yards in length. To the lower end is attached, instead of a hook, a small tassel about half an inch thick and some 3 or 4 inches long, made of spiders' web. The fisherman seats himself in a small canoe, proceeds to sea, and flies his kite, so as to keep the tassel of the spiders' web bobbing on the water. The fish that catches this entangles its teeth in the loose, soft, elastic bunch of spiders' web, from which it cannot disentangle itself until it is quietly lifted into the canoe by a small triangular net mounted on a forked stick. The spiders' web is procured from a certain kind of spider found at Dobu. The "insect," or a number of them, is tossed on a long cleft reed or bamboo until a close double tissue of web about 3 to 4 inches broad and 4 to 6 feet long is obtained. A similar tissue of spiders' web was made in the Solomon Islands many years ago for strangling widows, and without any connection with fishing. Complete sets of this ingenious and singular apparatus have been forwarded to the official collection in Brisbane, including the stored web, together with the spider itself for determination.—*Morning Post*, Dec. 28, 1898.

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